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Lys Val Leu Pro Ala Asp Val Arg Asp Phe Ile Asp Gly Gly Ser Gly
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Arg Glu Gln Thr Leu Arg Ala Asn Arg Ala Ala Phe Asp Arg Val Phe
35 40 45

Leu Val Pro Arg Val Leu Gln Asp Val Ser Ala Cys Ser Thr Arg Ala
50 55 60

Thr Leu Leu Gly His Pro Ala Thr Met Pro Val Ala Val Ala Pro Val
65 70 75 80

Ala Tyr His Arg Leu Val His Pro Asp Gly Glu Leu Ala Thr Ala Arg
85 90 95

Ala Ala Arg Asp Ala Gly Val Pro Phe Thr Val Ser Thr Leu Ser Ser
100 105 110

Val Pro Val Glu Asp Val Thr Ala Leu Gly Gly His Val Trp Phe Gln
115 120 125

Leu Tyr Cys Leu Arg Glu His Ala Ala Thr Leu Gly Leu Ile Arg Arg
130 135 140

Ala Glu Asp Ala Gly Cys Arg Ala Leu Met Leu Thr Leu Asp Val Pro

145 150 155 160

Trp Met Gly Arg Arg Pro Arg Asp Ile Arg Asn Arg Phe Arg Leu Pro
 165 170 175

Pro His Val Arg Pro Val His Leu Thr Ala Asn Ser Gly Thr Glu Ala
 180 185 190

His Arg Gly Ala Ser Gly Gly Ser Ala Leu Ala Ala His Thr Ala Met
 195 200 205

Glu Leu Ser Ala Ala Val Asp Trp Ser Tyr Leu Glu Thr Leu Arg Ala
 210 215 220

Ala Ser Gly Leu Pro Leu Val Val Lys Gly Ile Leu His Pro Glu Asp
 225 230 235 240

Ala Arg Arg Ala Ala Asp Leu Gly Ile Asp Gly Ile Val Val Ser Asn
 245 250 255

His Gly Gly Arg Gln Leu Asp Gly Ala Val Ala Ser Leu Asp Ala Leu
 260 265 270

Pro Gly Val Ala Glu Ser Val Gly Gly Arg Cys Glu Ile Met Leu Asp
 275 280 285

Gly Gly Val Arg Ser Gly Ala Asp Val Leu Lys Ala Leu Ala Leu Gly
 290 295 300

Ala Ser Gly Val Leu Val Gly Arg Pro Val Ile Trp Gly Leu Ala Ala
 305 310 315 320

Asp Gly Glu Arg Gly Val Arg Thr Val Leu Gly Leu Leu Gly Ala Glu
 325 330 335

Ile Glu Asp Gly Leu Gly Leu Ala Gly Cys Gly Asp Val Ala Ala Ala
 340 345 350

Gln Ala Leu Arg Thr Thr Arg Pro Gly Ala Gly Phe Val Ser
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Met Glu Ser Leu Pro Pro Leu Ala Val Asp Tyr Val Glu Met Tyr Val

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Ala Val Val Gly Thr Ala Asn Ala Ser Asp His Arg Ser Val Ala Leu	35	40	45
Arg Gln Gly Arg Ile Thr Leu Val Leu Thr Gln Ala Thr Ser Asp Gly	50	55	60
His Pro Ala Ser Ala Tyr Val Arg Thr His Gly Asp Gly Val Ala Asp	65	70	75
Ile Ala Leu Arg Thr Pro Asp Val Asp Val Val Phe Thr His Ala Val	85	90	95
Ala Ala Gly Ala Arg Pro Val Arg Ser Pro Ser Arg His Pro Gly Pro	100	105	110
Gly Pro Ala Cys Ser Ala Ala Ile Gly Gly Phe Gly Asp Val Val His	115	120	125
Thr Leu Val Gln Arg Asp Pro Gly Asp Asp Pro Gly Leu Pro Val Gly	130	135	140
Phe Ser Glu Ala Pro Ser Ala Ala Glu Ser Gly Ala Asp Ala Ala Glu	145	150	155
Leu Leu Asp Ile Asp His Phe Ala Val Cys Leu Pro Thr Gly Asp Leu	165	170	175
Asp Ile Ile Thr Asp Phe Tyr Val Ala Thr Leu Gly Phe Ser Glu Thr	180	185	190
Phe Lys Glu Arg Ile Glu Val Gly Thr Gln Ala Met Glu Ser Lys Val	195	200	205
Val Gln Ser Ala Ser Gly Ala Val Thr Leu Thr Leu Ile Glu Pro Asp	210	215	220
Pro Met Ala Glu Ala Gly Gln Ile Asp Met Phe Leu Glu Arg His Ala	225	230	235
Gly Ala Gly Val Gln His Val Ala Phe Ser Ser Ser Asp Ala Val His	245	250	255
Ala Val Asn Thr Leu Ser Glu Arg Gly Val Arg Phe Leu Ser Thr Pro			

260

265

270

Gly Ser Tyr Tyr Asp Leu Leu Glu Ser Arg Ile Gln Ile Arg Gly His
 275 280 285

Thr Val Asp Gln Leu Arg Ala Thr Gly Leu Leu Ala Asp Glu Asp His
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Gly Gly Gln Leu Phe Gln Ile Phe Thr Ala Ser Thr His Pro Arg Glu
 305 310 315 320

Thr Leu Phe Phe Glu Val Ile Glu Arg Gln Gly Ala Arg Thr Phe Gly
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Gly Ala Asn Ile Lys Ala Leu Tyr Glu Ala Val Glu Val Ala Arg Ser
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Gln Gln Arg Ala
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Val Val Gly Gly Lys Thr Ala Ile Leu His Glu Leu Gly Met Arg Ser
 35 40 45

Ile Ala Ala Gly Ile Arg Leu Val Thr Ala Arg Cys Thr Pro Ala Glu
 50 55 60

Gln Ser Leu Asp Trp Gly Val Ala Asp Gln Ile Leu Gly Arg Gly Ala
 65 70 75 80

Ala Glu Arg Leu Thr Ala Arg Arg Gly Gly Asp Ala Val Glu Asp Val
 85 90 95

Cys Val Ser Leu Phe Gln Met Ala Glu Ala Asn Pro Ile Leu Leu Thr
 100 105 110

Ile Asp Asp Val Asp Leu Ala Asp Asp Pro Ser Leu Leu Ala Ile Leu

115

120

125

Ser Met Thr Pro Leu Leu Thr Asp Thr Arg Met Met Ile Ala Val Thr
 130 135 140

Ile Cys Gln Asp Arg Pro Pro Ala Pro Leu Pro His Val Ala Glu Ser
 145 150 155 160

Leu Leu Arg Leu Pro Gly Ile Glu Leu Val Glu Leu Pro Leu Leu Pro
 165 170 175

Arg Pro Ala Val Arg Gln Phe Ala Thr Glu His Leu Gly Ala Glu Thr
 180 185 190

Ala Asp Gln Leu Ala Asp Asp Leu Tyr Arg Phe Ser Gly Gly Ser Pro
 195 200 205

Leu Leu Val Arg Ala Leu Ile Glu Asp Gln Glu Ala Gly Ala Pro Gly
 210 215 220

Leu Val Val Gly Asp Ser Phe Met Ser Ala Val Ala Ala Cys Val His
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Gly Cys Glu Pro Glu Ala Val Arg Val Ala Glu Ala Val Ala Val Leu
 245 250 255

Gly Glu His Ala Thr Pro Asp Ala Val Gly Glu Leu Val Gly Ile Ala
 260 265 270

Pro Pro Ala Ala Thr Arg Ser Met Gly Met Leu Glu Arg Ala Gly Leu
 275 280 285

Leu Ala Gly Gly Arg Phe Arg His Glu Ala Gly Arg Leu Ala Val Leu
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Gly Arg Met Thr Ser Tyr Gly Arg Met Glu Ile Leu Arg Arg Ala Ala
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Glu Ile Leu His Arg Arg Gly Gly Pro Pro Ser Ala Val Ala Thr Arg
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Leu Leu Glu Ala Gly Trp Ser Gly Glu Glu Trp Ala Phe Asp Val Leu
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Val Glu Ala Gly Arg Gln Ala Phe Asp Glu Gly Asp Phe Val Ala Val
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Met Lys Cys Leu Arg Leu Ala Leu Ala Ser Gly Trp Gly Thr Pro Arg
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Arg Leu Asp Val Lys Val Met Leu Ala Ala Ala Glu Trp Arg Val Asp
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Pro Ala Val Ala Ala Arg His Val Pro Asp Leu Leu Asp Ala Thr Arg
 405 410 415

Ser Gly Ala Leu Arg Gly Ser His Gly Met Glu Leu Phe Arg Gln Leu
 420 425 430

Leu Trp Tyr Gly Arg Phe Ala Asp Ala Ala Glu Leu Ile Asp Arg Leu
 435 440 445

Arg Pro Ser Val Ala Asp Arg Asp Ala Asp Ala Ser Leu Ile Ala Met
 450 455 460

Cys His Val His Pro Val Leu Leu Asp Arg Leu Pro Arg Ser Ala Arg
 465 470 475 480

Gly Ser Met Gly Gln Thr Val Glu Asp Ala Arg Arg Ile Leu Arg Gln
 485 490 495

Ala Glu Pro Thr Asp Glu Ala Met Asp Ser Ile Ile Ser Ala Leu Met
 500 505 510

Ala Leu Leu Leu Gly Gly Val Ser Glu Val Ala Ala Ser Cys Glu Thr
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Leu Leu Lys Glu Pro Gly Val Thr Lys Ala Pro Thr Trp Lys Ala Ile
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Gly Ala Glu Ala His Ala Gln Glu Ala Leu Thr Ile Leu Gln Pro Ser
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Gln Thr Ala Met Gly His Leu Asp Glu Ala Lys Ala Thr Val Ala Val
 595 600 605

Pro Met Pro Arg Glu Thr Ala Glu Thr Ala Phe Gly Ile Gly Tyr Glu
 610 615 620

Leu Ala Arg Ala His Tyr His Leu Val Thr Glu Gln Pro Arg Ala Ala
625 630 635 640

Phe Ala Gly Phe Leu Ala Cys Gly Gln Ala Val Gln Arg Trp Gly Ser
645 650 655

Ser Leu Ser Asp Val Val Pro Trp Arg Leu Gly Ala Ala Arg Ala Cys
660 665 670

Leu Gln Leu Gly Trp Arg Arg Arg Ala Ala Asp Leu Val Thr Ala Gln
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Ile Ala His Thr Ser Ser Gly Asp Leu Arg Thr Tyr Gly Val Ala Leu
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Arg Leu His Ala Gln Leu Ser Lys Pro Ala Gln Arg Gln Arg Leu Leu
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Met Gln Ser Val Asp Ala Leu Glu Ala Ala Gln Asp Arg Tyr Gln Leu
725 730 735

Ala Leu Ser Leu Cys Asp Leu Ala Gly Thr Pro Gln Leu Lys Gly Gly
740 745 750

Lys Asp Glu Ala Arg Ala Tyr Trp Val Arg Ala Gln Glu Leu Ala Arg
755 760 765

Glu Cys Asn Ala Lys Pro Leu Met Arg Arg Leu Ala Ala Gln His Asp
770 775 780

His Gly Glu Thr Ala Pro Leu Ser Gly Ala Glu Arg Arg Val Ala Val
785 790 795 800

Leu Ala Ala Arg Gly His Thr Asn Arg Glu Ile Ala Glu Ala Leu Tyr
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Ile Thr Arg Ser Thr Val Glu Gln His Leu Thr Arg Ile Tyr Arg Lys
820 825 830

Leu His Val Gln Thr Arg Gly Asp Leu Gly Asn Leu Phe Ala Ala Asp
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Val Arg Leu
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Glu Leu Ser Arg Leu Ser Ser Val Tyr Ser Pro Arg Thr Ser Gly Glu
          20          25          30

Asp Pro Glu His Val Glu Thr Leu Leu Ser Ala Gln Gly Glu Leu Pro
          35          40          45

Pro Ile Leu Val His Arg Pro Thr Met Arg Val Ile Asp Gly Leu His
          50          55          60

65          70          75          80

Leu Ile Asp Gly Thr Glu Ser Asp Ala Phe Val Leu Ala Val Glu Ala
          85          90          95

Asn Val Arg His Gly Leu Pro Leu Ser Leu Ala Asp Arg Lys Arg Ala
          100         105         110

Ala Val Arg Ile Ile Gly Thr His Pro Gln Trp Ser Asp Arg Arg Val
          115         120         125

Ala Ser Ala Thr Gly Ile Ser Ala Gly Thr Val Ala Asp Leu Arg Arg
          130         135         140

Arg Arg Gly Gln Gly Gly Asp Glu Ala Arg Ile Gly Arg Asp Gly Arg
          145         150         155         160

Ile Arg Pro Val Asp Ser Ser Glu Gly Arg Arg Leu Ala Ala Glu Leu
          165         170         175

Ile Arg Ser His Pro Asp Leu Ser Leu Arg Gln Val Ala Lys Gln Val
          180         185         190

Gly Ile Ser Pro Glu Thr Val Arg Asp Val Arg Gly Arg Leu Glu His
          195         200         205

Gly Glu Ser Pro Ile Pro Asp Gly Ser Arg Arg Leu Arg Thr Lys Pro
          210         215         220

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Glu Leu Leu Arg Arg Ala Glu Gln Asp Phe Gly His Val Asp Gly Arg
 225 230 235 240

Asp Arg Gln Ala Val Leu Glu Arg Leu Lys Ala Asp Pro Ala Leu Arg
 245 250 255

Leu Thr Glu Thr Gly Arg Ile Leu Leu Arg Met Leu Ser Leu His Ser
 260 265 270

Ile Asp Gly Gln Glu Trp Glu Arg Ile Leu Arg Gly Val Pro Pro His
 275 280 285

Trp Gly Thr Val Val Ala Arg Cys Ala Arg Asp His Ala Gln Ile Trp
 290 295 300

Ala Ala Phe Ala Asp Arg Leu Glu Gly Arg Ala Thr Asp Leu Ala Ala
 305 310 315 320

Gly

<210> 6
 <211> 369
 <212> PRT
 <213> Nonomuria

<400> 6

Met Thr Leu Glu Arg Thr Leu Ile Val Gly Thr Gly Leu Ile Gly Thr
 1 5 10 15

Ser Ala Ala Leu Ala Leu Arg Glu Lys Gly Val Ala Val Tyr Leu Ser
 20 25 30

Asp Val Asp Ala His Ala Val Arg Leu Ala Arg Ala Leu Gly Ala Gly
 35 40 45

Gln Glu Trp Thr Gly Gln Arg Val Asp Leu Ala Leu Ile Ala Val Pro
 50 55 60

Pro Pro Ser Val Gly Gln Arg Leu Ala Asp Leu Gln Gln Arg Arg Ala
 65 70 75 80

Ala Arg Ala Tyr Thr Asp Val Thr Ser Val Lys Val Asp Pro Ile Ala
 85 90 95

Asp Ala Glu Arg Leu Gly Cys Asp Leu Thr Ser Tyr Val Pro Gly His
 100 105 110

Pro Leu Ala Gly Arg Glu Arg Ser Gly Pro Ala Ala Ala Arg Ala Asp
 115 120 125

Leu Phe Leu Gly Arg Pro Trp Ala Leu Cys Pro Arg Pro Glu Thr Gly
 130 135 140

Ala Asp Ala Val Arg Leu Ala Arg Glu Leu Val Ser Met Cys Gly Ala
 145 150 155 160

Glu Pro Tyr Thr Val Ser Ala Gly Glu His Asp Thr Ala Val Ala Leu
 165 170 175

Val Ser His Ala Pro His Val Ala Ala Ser Ala Val Ala Ala Arg Leu
 180 185 190

Arg Asp Gly Asp Asp Val Ala Leu Ala Leu Ala Gly Gln Gly Leu Arg
 195 200 205

Asp Val Thr Arg Ile Ala Ala Gly Asp Pro Leu Leu Trp Arg Met Ile
 210 215 220

Leu Ala Ala Asn Ala Leu Pro Val Ala Gly Val Leu Glu Arg Ile Ala
 225 230 235 240

Ala Asp Leu Ala Ala Ala Ala Ser Ala Leu Arg Ser Gly Asp Leu Asp
 245 250 255

Asp Val Thr Asp Leu Leu Arg Arg Gly Val Asp Gly His Gly Arg Ile
 260 265 270

Pro Asp Lys His Gly Gly Pro Ala Arg Asp Tyr Thr Val Ile Gln Val
 275 280 285

Val Leu Gln Asp Arg Pro Gly Glu Leu Ala Arg Leu Phe Asn Ala Ala
 290 295 300

Gly Leu Ala Asp Val Asn Ile Glu Asp Ile Arg Leu Glu His Ser Ala
 305 310 315 320

Gly Leu Pro Val Gly Val Val Glu Val Ser Val Arg Pro Glu Asp Thr
 325 330 335

Gly Arg Leu Thr Glu Ala Leu Arg Phe His Gly Trp His Val Pro Pro
 340 345 350

Val Pro Asp Gly Asn Ser Arg Ile Asp Arg Thr Arg Ala Met Val Ser
 355 360 365

Asp

<210> 7

<211> 217

<212> PRT

<213> Nonomuria

<400> 7

Met Arg Val Leu Val Val Glu Asp Gln Val Asp Leu Ala Asp Ser Val
 1 5 10 15

Ala Arg Val Leu Arg Arg Glu Gly Met Ala Val Asp Val Ser His Asp
 20 25 30

Gly Asp Asp Ala Gln Glu Arg Leu Ser Val Ile Asp Tyr Asp Val Val
 35 40 45

Val Leu Asp Arg Asp Ile Pro Gly Val His Gly Asp Glu Leu Cys Ala
 50 55 60

Glu Ile Ala Val Asp Asp Arg Arg Thr Arg Val Leu Met Leu Thr Ala
 65 70 75 80

Ser Gly Thr Thr Ala Asp Arg Val Ala Gly Leu Ser Leu Gly Ala Asp
 85 90 95

Asp Tyr Leu Pro Lys Pro Phe Ala Phe Ala Glu Leu Val Ala Arg Ile
 100 105 110

Arg Ala Leu Gly Arg Arg Ala His Pro Pro Ala Pro Pro Ile Leu Val
 115 120 125

His Gly Asp Leu Arg Leu Asp Pro Ala Gln Arg Val Ala Ile Arg Gly
 130 135 140

Gly Met Arg Leu Pro Leu Thr Thr Lys Glu Leu Ala Val Leu Glu His
 145 150 155 160

Leu Leu Thr Ala Arg Gly Arg Val Val Ser Ala Glu Glu Leu Leu Glu
 165 170 175

Arg Val Trp Asp Glu Gln Ala Asp Pro Phe Thr Thr Thr Val Lys Ala
 180 185 190

Thr Ile Asn Arg Leu Arg Ser Lys Leu Gly Gln Pro Pro Val Ile Glu
 195 200 205

Thr Val Pro Arg Glu Gly Tyr Arg Ile
210 215

<210> 8
<211> 196
<212> PRT
<213> Nonomuria

<400> 8

Met Arg Arg Ser Glu Gly Asp Asp Glu Pro Arg Thr Leu Pro Pro Arg
1 5 10 15

Ala Arg Asp Arg Val Tyr Thr Ala Val Thr Arg Val Leu Ala Val Leu
20 25 30

Leu Leu Pro Val Ala Phe Val Arg Gln Pro Gly Arg Ala Arg Glu Leu
35 40 45

Ala Cys Gly Trp Ala Leu Arg Met Arg Phe Pro Ala Glu Asp Leu Thr
50 55 60

Gly Leu Thr Asp Gly Ala Arg Ala Ala Phe Thr Ala Ala Arg Ala Glu
65 70 75 80

Ala Leu Trp Arg His Gly Gln Leu Val Gly Leu Thr Ser Gly Tyr Arg
85 90 95

Asp Pro Arg Val Gln Gln Arg Met Phe Glu Glu Glu Val Arg Arg Ser
100 105 110

Gly Ser Val Ala Ala Ala Arg Met Phe Val Ala Pro Pro Ala Glu Ser
115 120 125

Asn His Val Lys Gly Met Ala Leu Asp Val Arg Pro His Glu Gly Ala
130 135 140

Arg Trp Leu Glu Ala His Gly Ala Arg Tyr Asp Leu Tyr Arg Ile Tyr
145 150 155 160

Asp Asn Glu Trp Trp His Phe Glu His Arg Pro Glu Cys Gly Gly Thr
165 170 175

Pro Pro Arg Arg Leu Pro His Pro Gly Ala Ala Trp Ala Ser Arg Asn
180 185 190

Gly Gly Arg Val
195

<210> 9
 <211> 319
 <212> PRT
 <213> Nonomuria

<400> 9

Met Asp Ala Glu Ser Val Arg Arg Gln Leu Arg Leu Gly Glu Asn Ala
 1 5 10 15

Thr Ala Trp Leu Ser Arg Leu Glu Glu Leu Gly Pro Pro Pro Glu Pro
 20 25 30

Val Arg Leu Pro Gln Gly Asp Glu Ala Arg Asp Leu Leu His Arg Leu
 35 40 45

Glu Val Pro Ala Pro Asp Val Glu Glu Ile Val Ala Ala Thr Pro Gly
 50 55 60

Pro Asp Arg Asp Pro Ala Leu Trp Trp Leu Leu Glu Arg Ala His His
 65 70 75 80

Glu Leu Val Arg His Met Gly Asp Tyr Lys Val Lys Val Arg Gly Gly
 85 90 95

Pro Thr Leu Pro Tyr Glu Thr Gly Ala Ala Ala Arg Tyr Phe His Val
 100 105 110

Tyr Val Phe Leu Ala Thr Leu Pro Ala Leu Arg Arg Phe His Ala Thr
 115 120 125

Arg Asp Ile Pro Glu Ala Thr Thr Trp Glu Thr Leu Thr Gln Leu Gly
 130 135 140

Glu Ser Val Ala Ile His Arg Arg Lys Tyr Gly Glu Gly Gly Thr Asn
 145 150 155 160

Met Pro Trp Trp Leu Thr Leu Leu Val Arg Gly Leu Val Tyr Arg Leu
 165 170 175

Gly Arg Leu Gln Tyr Asn Leu Ala Val Ala Lys Asp Gly Thr Pro Val
 180 185 190

Leu Gly Leu His Ile Pro Glu Val Gly Gly Pro Leu Ile Pro Asp Ile
 195 200 205

Tyr Tyr Asp Ser Leu Arg Arg Ala Arg Pro Phe Phe Glu Arg His Phe
 210 215 220

Pro Glu His Gly Ala Arg Ala Ala Thr Gly Thr Ser Trp Leu Leu Asp
 225 230 235 240

Pro Gln Leu Ala Glu Tyr Leu Ala Glu Asp Ser His Ile Leu Gln Leu
 245 250 255

Arg Arg Gly Trp Thr Leu Leu Asp Ser Glu Pro Gln Asp Gly Asp Asp
 260 265 270

Ala Ile Leu Glu Phe Val Phe Arg Tyr Asn Gly Gln Pro Leu Glu Glu
 275 280 285

Leu Pro Gln Arg Ser Thr Leu Glu Lys Ala Val Val Thr His Leu Leu
 290 295 300

Ala Gly Arg His Trp Tyr Gln Arg Ser Gly Arg Ile Glu Leu Pro
 305 310 315

<210> 10
 <211> 408
 <212> PRT
 <213> Nonomuria

<400> 10

Met Arg Val Leu Leu Ser Thr Ser Gly Ser Arg Gly Asp Val Glu Pro
 1 5 10 15

Leu Leu Gly Leu Ala Val Gln Leu Arg Glu Leu Gly Ala Glu Thr Arg
 20 25 30

Met Cys Ala Pro Pro Asp Cys Ala Glu Arg Leu Ala Glu Ala Gly Val
 35 40 45

Pro Leu Val Pro Val Gly Thr Ser Met Arg Ala Lys Leu His Gly Lys
 50 55 60

Arg Pro Pro Ser Leu Glu Asp Val Pro Arg Leu Asp Ala Glu Ala Ile
 65 70 75 80

Ala Thr Gln Leu Asp Gln Val Leu Pro Ala Ala Glu Gly Cys Glu Val
 85 90 95

Met Val Val Ser Gly Val Leu Ser Ala Ala Val Ala Val Arg Ser Val
 100 105 110

Ala Glu Lys Leu Gly Ile Pro Tyr Val Tyr Val Phe Tyr Cys Pro Ile
 115 120 125

Tyr Val Pro Ser Pro Tyr Tyr Pro Pro Pro Pro Pro Leu Gly Glu Gln
 130 135 140

Pro Ala Arg Asp Val Thr Asp Asn Arg Val Leu Trp Asp Arg Asn Asn
 145 150 155 160

Gln Gly Ala Tyr Gln Arg Phe Gly Ala Ala Leu Asn Ser Arg Arg Ala
 165 170 175

Ser Ile Gly Leu Pro Pro Val Asp Asp Ile Phe Ser Tyr Gly Tyr Thr
 180 185 190

Asp Arg Pro Phe Leu Ala Ala Asp Pro Val Leu Ala Pro Leu Gln Arg
 195 200 205

Thr Asp Leu Asp Val Val Gln Thr Gly Ala Trp Ile Met Pro Asp Glu
 210 215 220

Arg Pro Leu Pro Ala Glu Val Glu Ala Phe Leu Glu Ala Gly Pro Pro
 225 230 235 240

Pro Val His Val Glu Phe Gly Ser Gly Pro Ala Pro Thr Asp Ala Ala
 245 250 255

Arg Val Ala Ile Glu Ala Ile Arg Ala His Gly His Arg Val Ile Val
 260 265 270

Ser Arg Gly Trp Ala Gly Leu Ala Pro Pro Asp Asp Arg Ser Asp Cys
 275 280 285

Leu Thr Val Gly Glu Val Asn His Gln Val Leu Phe Gly Arg Val Ala
 290 295 300

Ala Val Val His Ala Gly Ser Ala Gly Ile Thr Thr Ala Val Thr Arg
 305 310 315 320

Ala Gly Ala Pro Gln Val Val Val Pro Gln Met Thr Asp Gln Pro Tyr
 325 330 335

His Ala Gly Arg Val Ala Glu Leu Gly Ile Gly Val Ala His Asp Gly
 340 345 350

Arg Val Pro Thr Val Glu Ser Leu Ser Ala Ala Leu Thr Thr Ala Leu
 355 360 365

Ala Pro Glu Thr Arg Ala Arg Ala Ile Asp Val Ala Gly Lys Ile Arg
 370 375 380

Ala Asp Gly Ala Ala Val Ala Ala Lys Leu Leu Leu Asp Thr Ala Ala
 385 390 395 400

Gly Ala Gly Arg Asn Arg Thr Glu
 405

<210> 11
 <211> 489
 <212> PRT
 <213> Nonomuria

<400> 11

Met Glu Glu Phe Asp Val Val Val Ala Gly Gly Gly Pro Gly Gly Ser
 1 5 10 15

Thr Val Ala Thr Leu Val Ala Met Gln Gly His Arg Val Leu Leu Val
 20 25 30

Glu Lys Glu Val Phe Pro Arg Tyr Gln Ile Gly Glu Ser Leu Leu Pro
 35 40 45

Ser Thr Val His Gly Val Cys Arg Met Leu Gly Val Thr Asp Glu Leu
 50 55 60

Ala Ala Ala Gly Phe Pro Val Lys Arg Gly Gly Thr Phe Arg Trp Gly
 65 70 75 80

Ala Arg Pro Glu Pro Trp Thr Phe Ser Phe Ser Val Ser Pro Arg Ile
 85 90 95

Thr Gly Pro Thr Thr Phe Ala Tyr Gln Val Glu Arg Ala Arg Phe Asp
 100 105 110

Glu Ile Leu Leu Gly Asn Ala Arg Arg Lys Gly Val Val Val Arg Glu
 115 120 125

Gly Cys Ser Val Thr Glu Val Ile Glu Asp Gly Asp Arg Val Thr Gly
 130 135 140

Leu Arg Tyr Val Asp Pro Asp Gly Gly Glu His Ala Val Ser Ala Arg
 145 150 155 160

Phe Val Ile Asp Ala Ser Gly Asn Lys Ser Arg Leu Tyr Ser Ser Val

Gly Gly Thr Arg Asn Tyr Ser Glu Phe Phe Arg Ser Leu Ala Leu Phe
 180 185 190

Gly Tyr Phe Glu Gly Gly Lys Arg Leu Ala Glu Pro Tyr Ser Gly Asn
 195 200 205

Ile Leu Ser Val Ala Phe Asp Ser Gly Trp Phe Trp Tyr Ile Pro Leu
 210 215 220

Ser Asp Thr Leu Thr Ser Val Gly Ala Val Val Arg Arg Glu Met Ala
 225 230 235 240

Glu Lys Ile Gln Gly Asp Arg Glu Lys Ala Leu Ala Ala Leu Ile Ala
 245 250 255

Glu Cys Pro Leu Ile Ser Glu Tyr Leu Ala Pro Ala Arg Arg Val Thr
 260 265 270

Thr Gly Lys Tyr Gly Gln Leu Arg Val Arg Lys Asp Tyr Ser Tyr His
 275 280 285

Gln Thr Lys Phe Trp Arg Pro Gly Met Ile Leu Val Gly Asp Ala Ala
 290 295 300

Cys Phe Val Asp Pro Val Phe Ser Ser Gly Val His Leu Ala Thr Tyr
 305 310 315 320

Ser Gly Leu Leu Ala Ala Arg Ser Ile Asn Ser Val Leu Ala Gly Asp
 325 330 335

Val Glu Glu Lys Ile Ala Leu His Glu Phe Glu Ala Arg Tyr Arg Arg
 340 345 350

Glu Tyr Ser Val Tyr Tyr Glu Phe Leu Leu Ala Phe Tyr Glu Met Asn
 355 360 365

Val Asn Glu Glu Ser Tyr Phe Trp His Ala Lys Lys Val Thr Asn Asn
 370 375 380

Lys Glu Tyr Thr Glu Leu Glu Ser Phe Val Asp Leu Val Gly Gly Leu
 385 390 395 400

Ser Ser Gly Glu Thr Ala Leu Ala Thr Ser Gly Arg Ile Ala Glu Arg
 405 410 415

Ser Ala Glu Phe Ala Ala Ala Val Asp Gln Met Ala Asp Gly Asp Asp
 420 425 430

Ser Ser Met Val Pro Leu Phe Lys Ser Gln Val Val Lys Gln Val Met
 435 440 445

Gln Glu Gly Gly Gln Glu Gln Met Arg Ala Val Leu Gly Ala Asp Ala
 450 455 460

Glu Pro Glu Gln Pro Leu Phe Pro Gly Gly Leu Val Thr Ser Pro Asp
 465 470 475 480

Gly Met Arg Trp Leu Thr His His Pro
 485

<210> 12
 <211> 420
 <212> PRT
 <213> Nonomuria

<400> 12

Met Arg Ile Asp Ser Glu Trp Ser Phe Asp Pro Gly Met Asp Asp Asp
 1 5 10 15

Ile Asp Ala Gly Ala Pro Val Leu Gln Pro Thr Ala Asn Tyr Met Met
 20 25 30

Arg Thr His Cys Asp Pro His Glu Asp Met Phe Ala Leu Arg Ala His
 35 40 45

Gly Pro Leu Val Arg Ile Gly Gly Asp Ala Ala Thr Gln Leu Arg Val
 50 55 60

Asp Tyr Val Trp Gln Ala Leu Gly Tyr Asp Val Val Arg Arg Ile Leu
 65 70 75 80

Gly Asp His Glu Asn Phe Thr Thr Arg Pro Arg Trp Ser Ser Ala Pro
 85 90 95

Ser Ile Ala Gly Glu Pro Ile Pro Pro Asn Leu Val Gly Gln Leu Ser
 100 105 110

Val Tyr Asp Pro Pro Glu His Thr Arg Leu Arg Gly Met Leu Thr Pro
 115 120 125

Glu Phe Thr Ala Arg Arg Ile Arg Arg Leu Glu Pro Ala Met Gln Asp
 130 135 140

Leu Ile Asp Asp Arg Ile Asp Glu Leu Glu Ala Ala Gly Pro Pro Ala
 145 150 155 160

Asp Val Gln Ala Leu Phe Ala Asp Pro Val Gly Gly Gly Val Leu Cys
 165 170 175

Glu Leu Leu Gly Ile Pro Arg Asp Asp Arg Ile Glu Phe Ile Arg Arg
 180 185 190

Val Arg Gln Asn Val Asp Leu Ser Arg Gly Phe Lys Ala Arg Ala Ala
 195 200 205

Asp Ser Ala Ala Phe Asn Arg Tyr Leu Asn Gly Leu Ile Ile Arg Gln
 210 215 220

Arg Lys Asp Pro Asp Glu Gly Phe Ile Gly Met Leu Val Arg Glu His
 225 230 235 240

Gly Asp Asp Val Thr Asp Glu Glu Leu Lys Gly Val Leu Thr Ala Leu
 245 250 255

Ile Leu Gly Gly Val Glu Thr Val Ala Gly Ser Ile Gly Phe Gly Val
 260 265 270

Leu Ala Leu Leu Asp His Pro Asp Gln Arg Gln Ser Leu Phe Ala Gly
 275 280 285

Arg Glu Glu Ala Asp Arg Val Val Gly Glu Leu Leu Arg Phe Leu Ser
 290 295 300

Pro Val Gln Gln Pro Asn Pro Arg Leu Ala Val Arg Asp Val Val Val
 305 310 315 320

Asp Gly Gln Leu Ile Lys Ala Gly Asp Tyr Val Leu Cys Ser Ile Leu
 325 330 335

Met Ala Asn Arg Asp Glu Ala Leu Thr Pro Asn Ala Asn Val Leu Asp
 340 345 350

Val Arg Arg Asp Cys Gly Ser His Val Gly Phe Gly His Gly Ile His
 355 360 365

Tyr Cys Ile Gly Ala Ala Ile Ala Arg Thr Leu Leu Arg Met Ala Tyr
 370 375 380

Gln Ser Leu Trp Arg Arg Phe Pro Gly Leu Arg Leu Ala Val Ser Ala
 385 390 395 400

Glu Glu Val Lys Phe Arg Asn Ala Phe Ile Asp Cys Pro Asp Glu Leu
 405 410 415

Pro Val Thr Trp

420

<210> 13
 <211> 398
 <212> PRT
 <213> Nonomuria

<400> 13

Met Ser Gly Asp Gly Ala Arg Pro Leu His Thr Arg Arg Gln Asp Leu
 1 5 10 15

Asp Pro Ala Asp Glu Leu Arg Ala Ala Gly Thr Leu Thr Arg Ile Thr
 20 25 30

Ile Gly Ser Gly Ala Asp Ala Glu Thr Thr Trp Leu Ala Thr Gly Tyr
 35 40 45

Thr Val Val Arg Gln Val Leu Gly Asp His Arg Arg Phe Ser Thr Arg
 50 55 60

Arg Arg Trp Asn Glu Arg Asp Glu Ile Gly Gly Arg Gly Asn Phe Arg
 65 70 75 80

Pro Arg Glu Leu Val Gly Asn Leu Met Asp Tyr Asp Pro Pro Glu His
 85 90 95

Thr Arg Leu Arg Gln Lys Leu Thr Pro Gly Phe Thr Leu Arg Arg Ile
 100 105 110

Arg Arg Leu Lys Pro Tyr Ile Glu Gln Ile Val Thr Glu Arg Leu Asp
 115 120 125

Ala Leu Glu Arg Ala Gly Pro Pro Ala Asp Leu Val Glu Leu Val Ala
 130 135 140

145 150 155 160

Asp Asp Arg Ala Met Phe Met Gln Leu Cys His Gly His Leu Asp Ala
 165 170 175

Ser Arg Ser Gln Lys Arg Arg Ala Ala Ala Gly Ala Ala Phe Ser Arg
 180 185 190

Tyr Leu Leu Ala Met Ile Ala Arg Glu Arg Lys Asp Pro Gly Glu Gly
 195 200 205

Leu Leu Gly Ala Val Leu Ala Glu Tyr Gly Asp Thr Ala Thr Asp Glu
 210 215 220

Glu Leu Arg Gly Phe Cys Val Gln Val Met Leu Ala Gly Asp Asp Asn
 225 230 235 240

Ile Ser Gly Met Ile Gly Leu Gly Val Leu Ala Leu Leu Arg His Pro
 245 250 255

Glu Gln Ile Ala Ala Leu Gln Gly Asp Asp Gln Ser Ala Asp Arg Ala
 260 265 270

Val Asp Glu Leu Ile Arg Tyr Leu Thr Val Pro Tyr Ala Pro Thr Pro
 275 280 285

Arg Val Ala Met Glu Asp Val Thr Ile Gly Gly Gln Val Ile Lys Glu
 290 295 300

Gly Glu Thr Val Ser Cys Ser Leu Pro Met Ala Asn Arg Asp Pro Ala
 305 310 315 320

Leu Leu Pro Asp Ala Gly Arg Leu Asp Val Arg Arg Glu Pro Val Pro
 325 330 335

His Val Ala Phe Gly His Gly Val His His Cys Leu Gly Ala Ala Leu
 340 345 350

Ala Arg Leu Glu Leu Arg Thr Val Tyr Thr Ala Leu Trp Arg Arg Phe
 355 360 365

Pro Thr Leu Arg Leu Ala Asp Pro Asp Arg Glu Pro Ser Phe Arg Leu
 370 375 380

Thr Thr Pro Ala Tyr Gly Leu Thr Ser Leu Met Val Ala Trp
 385 390 395

<210> 14

<211> 384

<212> PRT

<213> Nonomuria

<400> 14

Met Val Val Pro Leu Pro His Gln Arg Leu Arg Leu Asp Pro Val Pro
 1 5 10 15

Ala Leu Phe Asp Leu Gln Glu Asp Gly Pro Leu His Glu Tyr Asp Thr
 20 25 30

Glu Pro Gly Leu Asp Gly His Lys Gln Trp Leu Val Thr Gly Tyr Gly
 35 40 45

Glu Ile Arg Glu Ile Leu Ala Asp Ala Asn Arg Phe Ser Ser Met Arg
 50 55 60

Pro Val Glu Asp Glu Ala Glu Arg Ala Trp Leu Pro Gly Ile Leu Gln
 65 70 75 80

Ser Tyr Asp Ala Pro Asp His Thr Arg Leu Arg Arg Thr Val Thr Arg
 85 90 95

Ala Asn Thr Ala Arg Arg Ile Glu Ser Leu Arg Pro Val Val Glu Glu
 100 105 110

Thr Val Glu Asp Cys Leu Ala Asp Leu Glu Ser Met Gly Ser Pro Val
 115 120 125

Asp Phe Val Arg Asn Ala Ala Trp Pro Ile Pro Ala Leu Ile Ala Cys
 130 135 140

Asp Phe Leu Gly Val Pro Arg Asp Asp Gln Ala Glu Leu Ser Arg Met
 145 150 155 160

Phe Arg Asp Ser Arg Glu Ser Arg Val Pro Arg Gln Arg Asn Val Ser
 165 170 175

Gly Leu Gly Ile Val Asp Tyr Ala Arg Lys Leu Ala Ala Arg Glu Arg
 180 185 190

Leu Asp Pro Gly Thr Gly Met Ile Gly Gly Ile Val Arg Glu His Gly
 195 200 205

Gly Glu Val Thr Asp Glu Glu Leu Ala Gly Leu Val Glu Gly Ile Met
 210 215 220

Ile Gly Ala Val Glu Gln Met Ala Ser Gln Leu Ala Ile Ala Val Leu
 225 230 235 240

Leu Leu Val Thr His Pro Asp Gln Met Ala Leu Leu Arg Glu Arg Pro
 245 250 255

Glu Leu Ala Asp Ser Ala Ala Glu Glu Val Phe Arg Tyr Ala Ser Ile
 260 265 270

Val Glu Thr Pro Ser Pro Arg Thr Ala Leu Val Asp Thr Arg Leu Ala
 275 280 285

Gly Arg Asp Ile His Ala Gly Asp Val Leu Thr Cys Ser Ile Leu Ala

290

295

300

Gly Asn Arg Ala Arg Glu Asp Arg Phe Asp Leu Thr Arg Gly Asn Pro
 305 310 315 320

Glu His Leu Ala Phe Gly His Gly Val His Phe Cys Leu Gly Ala Pro
 325 330 335

Leu Ala Arg Leu Gln Ala Gln Val Ala Leu Pro Ala Leu Val Arg Arg
 340 345 350

Phe Pro Ser Leu Arg Leu Ala Val Pro Ala Glu Asp Leu Arg Phe Lys
 355 360 365

Pro Gly Lys Pro Ala Pro Phe Ala Val Glu Glu Leu Pro Val Glu Trp
 370 375 380

<210> 15
 <211> 393
 <212> PRT
 <213> Nonomuria

<400> 15

Met Glu Val Phe Glu Glu Leu Asn Val Val Leu Pro Gly Glu Leu His
 1 5 10 15

Trp Arg Asp Arg Phe Asp Pro Val Pro Gln Leu Arg Ser Phe Met Ala
 20 25 30

Glu Gly Pro Met Thr Glu Leu Gly Ala Glu Glu Gly Pro Gly Gly Arg
 35 40 45

Thr Ala Trp Leu Ala Thr Gly Phe Asp Glu Val Arg Gln Val Leu Gly
 50 55 60

Ser Asp Lys Phe Ser Ser Arg Leu Leu Tyr Gly Gly Thr Ala Ala Gly
 65 70 75 80

Ile Val Phe Pro Gly Phe Ile Thr Gln Tyr Asp Pro Pro Glu His Thr
 85 90 95

Arg Leu Arg Arg Val Val Ser Pro Ala Phe Thr Val Arg Arg Met Glu
 100 105 110

Arg Phe Arg Pro Gln Val Asp Gln Val Val Glu Asp Cys Leu Asp Ala
 115 120 125

Ile Glu Ser Ile Gly Gly Pro Leu Asp Phe Val Pro His Phe Gly Trp

130

135

140

Ser Ile Ala Thr Thr Ala Thr Cys Asp Phe Leu Gly Ile Pro Arg Asp
 145 150 155 160

Asp Gln Ala Glu Leu Ser Arg Ser Leu His Ala Ser Arg Ser Gln Arg
 165 170 175

Ala Ala Ser Arg Arg Gly Ala Ala Gly Asn Lys Phe Met Thr Tyr Met
 180 185 190

Gly Gln Val Val Ala Arg Thr Arg Arg Asp Pro Gly Asp Asp Met Leu
 195 200 205

Ser Val Val Val Arg Glu His Gly Asp Glu Ile Thr Asp Ala Glu Leu
 210 215 220

Thr Gly Leu Ala Ala Phe Val Met Gly Ala Gly Gly Asp Gln Val Ala
 225 230 235 240

Arg Phe Leu Ala Ala Gly Ala Trp Leu Met Ala Glu Val Pro Glu Gln
 245 250 255

Phe Ala Leu Leu Arg Asp Lys Pro Asp Val Val Pro Asp Trp Leu Glu
 260 265 270

Glu Met Val Arg Tyr Leu Thr Ile Asp Glu Lys Leu Thr Pro Arg Ile
 275 280 285

Ala Leu Glu Asp Val Arg Ile Gly Asp Arg Ile Val Lys Ala Gly Asp
 290 295 300

Thr Val Thr Cys Ser Leu Leu Gly Ala Asn Arg Arg His Phe Pro Gly
 305 310 315 320

Pro Asp Asp Gln Phe Asp Leu Thr Arg Asp Arg Ala Pro Asn Val Ala
 325 330 335

Phe Gly His Gly Ile His His Cys Leu Gly Arg Pro Leu Ala Glu Leu
 340 345 350

Ile Phe Arg Ser Ala Ile Pro Ala Leu Ala Arg Arg Phe Pro Ala Leu
 355 360 365

Arg Leu Ala Glu Pro Glu Gln Glu Ile Arg Leu Gly Pro Pro Pro Phe
 370 375 380

Asp Val Lys Ala Leu Leu Leu Asp Trp

385

390

<210> 16
 <211> 69
 <212> PRT
 <213> Nonomuria

<400> 16

Met Thr Asn Pro Phe Glu Asn Glu Asp Gly Ser Phe Leu Val Leu Val
 1 5 10 15

Asn Asp Glu Gly Gln His Ser Leu Trp Pro Ser Phe Ala Glu Val Pro
 20 25 30

Pro Gly Trp Thr Arg Val His Gly Val Ala Thr Arg Gln Glu Cys Leu
 35 40 45

Ala Tyr Val Glu Glu Asn Trp Thr Asp Ile Arg Pro Lys Ser Leu Ile
 50 55 60

Ala Glu Ala Gly Ala
 65

<210> 17
 <211> 1863
 <212> PRT
 <213> Nonomuria

<400> 17

Met Thr Ile Asp Asp Thr Arg Ala Lys Pro Arg Ser Ser Val Glu Asp
 1 5 10 15

Val Trp Pro Leu Ser Pro Leu Gln Glu Gly Met Leu Tyr His Thr Ala
 20 25 30

Leu Asp Asp Asp Gly Pro Asp Thr Tyr Thr Val Gln Thr Val Tyr Gly
 35 40 45

Ile Asp Gly Pro Leu Asp Ala Gly Arg Leu Arg Ala Ser Trp Gln Ala
 50 55 60

Leu Val Asp Arg His Ala Ala Leu Arg Ala Tyr Phe Arg Tyr Val Ser
 65 70 75 80

Gly Ala Gln Met Val Gln Val Ile Ala Arg Glu Ala Glu Ile Pro Trp
 85 90 95

Arg Glu Thr Asp Leu His Gly Leu Pro Asp Asp Leu Leu Asp Ser Glu
 100 105 110

Val Asp Arg Leu Ala Ala Asp Glu Leu Ala Glu Arg Leu Pro Leu Asp
 115 120 125

Ala Ala Pro Leu Met Lys Leu His Leu Ile Arg Leu Gly Pro Ala Ser
 130 135 140

His Arg Leu Val His Thr Leu His His Val Leu Leu Asp Gly Trp Ser
 145 150 155 160

Met Pro Ile Leu His Arg Glu Leu Ala Ala Ile Tyr Ala Ala Gly Gly
 165 170 175

Asp Ala Ser Gly Leu Pro Ala Ala Val Ser Tyr Arg Asp Tyr Leu Ala
 180 185 190

Trp Leu Gly Arg Gln Asp Lys Glu Ala Ala Arg Ala Ala Trp Arg Gln
 195 200 205

Glu Leu Ala Gly Leu Asp Thr Pro Thr Leu Val Ala Pro Ala Asp Pro
 210 215 220

Ala Arg Val Pro Asp Met Gly Thr Ala Val Ile Glu Leu Ser Ala Glu
 225 230 235 240

Leu Thr Asp Gly Leu Ala Arg Leu Ala Arg Gly His Gly Leu Thr Leu
 245 250 255

Asn Thr Val Val Gln Gly Ala Trp Ala Met Val Leu Ala Gln Leu Ala
 260 265 270

Gly Arg Thr Asp Val Val Phe Gly Ala Thr Ala Ser Gly Arg Pro Ala
 275 280 285

Glu Leu Ala Gly Val Glu Ser Met Val Gly Gln Leu Leu Gly Thr Leu
 290 295 300

Pro Val Arg Val Arg Leu Glu Gly Gly Arg Arg Val Val Glu Leu Leu
 305 310 315 320

Ala Glu Leu Gln Arg Ser Gln Ser Ala Leu Met Ala His Gln His Leu
 325 330 335

Gly Leu Gln Glu Met Gln Ala Ala Val Gly Pro Gly Ala Val Phe Asp
 340 345 350

Thr Leu Val Ile Tyr Glu Asn Phe Pro Arg Gln Gly Leu Gly Arg Ala
 355 360 365

Glu Glu Asp Gly Gly Leu Asp Leu Arg Pro Val Arg Arg Gly Arg Asn
 370 375 380

Ser Ser His Tyr Pro Phe Thr Leu Ile Thr Gly Pro Gly Ala Gln Met
 385 390 395 400

Pro Leu Ile Leu Asp Tyr Asp Arg Gly Leu Phe Asp Glu Ala Ala Ala
 405 410 415

Glu Ser Val Val Gly Ala Leu Ala Arg Val Leu Glu Arg Leu Val Ala
 420 425 430

Glu Pro Asp Val Leu Val Gly Arg Leu Thr Leu Leu Ser Glu Ala Glu
 435 440 445

Arg Ala Leu Val Val Glu Asp Trp Asn Ala Thr Ala Gly Pro Thr Pro
 450 455 460

Gly Gln Ser Val Leu Asp Leu Phe Gly Arg Arg Val Ala Thr Ala Pro
 465 470 475 480

Asp Ala Val Ala Ile Thr Asp Ala Gly Gly Ala Asp Leu Thr Tyr Ala
 485 490 495

Glu Val Asp Gln Ala Ala Asn Arg Leu Ala Arg His Leu Ala Ala Arg
 500 505 510

Gly Ile Gly Arg Gly Asp Arg Val Gly Val Val Met Asp Arg Ser Pro
 515 520 525

Asp Leu Leu Ile Ala Phe Leu Ala Ser Trp Lys Ala Gly Ala Ala Tyr
 530 535 540

Val Pro Val Asp Val Glu His Pro Ala Glu Arg Ile Glu Phe Val Leu
 545 550 555 560

Ala Asp Ser Gly Val Ser Ala Val Leu Cys Thr Arg Ala Thr Arg Glu
 565 570 575

Val Ala Pro Ala Asp Ala Ile Val Ile Asp Ala Pro Glu Thr Arg Ala
 580 585 590

Ala Ile Asp Ala Gly Ala Ala Thr Ala Pro Gln Ile Arg Leu Ser Ala
 595 600 605

Asp Asp Leu Ala Tyr Val Met Tyr Thr Ser Gly Ser Thr Gly Leu Pro

610

615

620

Lys Gly Val Gly Val Pro His Gly Ala Val Ala Gly Leu Ala Gly Asp
625 630 635 640

Glu Gly Trp Arg Ile Gly Pro Gly Asp Ala Val Leu Met His Ala Thr
645 650 655

His Val Phe Asp Pro Ser Leu Tyr Ala Met Trp Val Pro Leu Ala Met
660 665 670

Gly Gly Arg Val Val Leu Thr Glu Pro Gly Val Leu Asp Ala Leu Gly
675 680 685

Met Arg Gln Ala Val Glu Arg Gly Val Thr Phe Val His Leu Thr Ala
690 695 700

Gly Thr Phe Arg Ala Leu Ala Glu Ser Ser Pro Glu Cys Phe Ala Gly
705 710 715 720

Leu Val Glu Val Gly Thr Gly Gly Asp Val Val Pro Ala Gln Ser Val
725 730 735

Glu His Leu Arg Arg Ala Val Pro Gly Leu Arg Val Arg Asn Thr Tyr
740 745 750

Gly Pro Thr Glu Thr Thr Leu Cys Ala Thr Trp Lys Pro Ile Glu Pro
755 760 765

Gly Glu Glu Val Gly Arg Glu Leu Pro Ile Gly Arg Pro Met Thr Asn
770 775 780

Arg Arg Ile Tyr Ile Leu Asp Ala Phe Leu Arg Pro Val Ala Pro Gly
785 790 795 800

Val Ala Gly Glu Leu Tyr Ile Ala Gly Thr Gly Leu Ala Arg Gly Tyr
805 810 815

Leu Gly Gly Pro Gly Leu Thr Ala Glu Arg Phe Val Ala Val Pro Ala
820 825 830

Ser Val Asp Pro Ser Pro Gly Glu Arg Met Tyr Arg Thr Gly Asp Leu
835 840 845

Ala Arg Trp Asn Arg Asp Gly Glu Val Val Phe Leu Gly Arg Thr Asp
850 855 860

Asp Gln Val Lys Ile Arg Gly Tyr Arg Val Glu Leu Gly Glu Val Glu
 865 870 875 880

Ala Val Leu Ala Ala Gln Arg Gly Val Val Glu Ala Val Val Val Ala
 885 890 895

Arg Glu Asp Gln Pro Gly Glu Lys Arg Leu Val Gly Tyr Phe Ile Ser
 900 905 910

Asp Gly Thr Asp Ala Gly Pro Ala Glu Ile Arg Arg Glu Met Ala Leu
 915 920 925

Val Leu Pro Ala Tyr Met Val Pro Leu Ala Val Val Ala Leu Pro Ala
 930 935 940

Leu Pro Val Thr Pro Asn Gly Lys Val Asp Arg Leu Ala Leu Pro Ala
 945 950 955 960

Pro Asp Leu Val Gly Arg Ala Pro Asp Arg Ala Gln Glu Ser Glu Thr
 965 970 975

Glu Lys Val Leu Cys Ala Leu Phe Ala Glu Ile Leu Gly Val Asp Arg
 980 985 990

Val Gly Val Asp Asp Ala Phe His Asp Leu Gly Gly Ser Ser Ala Leu
 995 1000 1005

Ala Met Arg Leu Ile Ala Arg Ile Arg Glu Glu Leu Gly Ala Asp
 1010 1015 1020

Leu Pro Ile Arg Gln Leu Phe Ser Ala Ala Thr Pro Ala Gly Val
 1025 1030 1035

Ala Arg Ala Leu Ala Ala Lys Ser Arg Pro Ala Leu Glu Pro Ala
 1040 1045 1050

Glu Arg Pro Gly Arg Val Pro Leu Thr Ala Gln Gln Leu Ser Ala
 1055 1060 1065

Trp Leu Leu Ala Ser Pro Gly Glu Ala Ala Gly Leu His Val Ser
 1070 1075 1080

Val Ala Leu Arg Leu Arg Gly Arg Leu Asp Val Pro Ala Leu Glu
 1085 1090 1095

Ala Ala Leu Gly Asp Val Ala Ala Arg His Glu Ile Leu Arg Thr
 1100 1105 1110

Asp Leu Ser Gly Asp Pro Thr Phe Leu Glu Val Val Thr Arg Ala
 1355 1360 1365
 Gln Glu Ala Ile Arg Ser Ala Arg Gln His Leu Asp Val Pro Phe
 Ala Arg Ile Val Glu Leu Leu Asp Leu Pro Val Ser Leu Ser Arg
 1385 1390 1395
 His Pro Val Phe Gln Val Gly Leu Glu Val His Glu Glu Asp Leu
 1400 1405 1410
 Gly Ala Trp Asp Ala Thr Glu Leu Pro Ala Leu Arg Thr Ser Val
 1415 1420 1425
 Glu Pro Val Gly Pro Glu Ala Ile Glu Leu Asp Leu Ala Phe Arg
 1430 1435 1440
 Leu Thr Glu Arg Arg Asp Glu Asp Gly Ile Glu Gly Thr Leu His
 1445 1450 1455
 Tyr Ala Ala Asp Leu Phe Asp Gln Ala Thr Ala Glu Ser Leu Ala
 1460 1465 1470
 Arg Arg Leu Val Ser Phe Leu Glu Gln Val Ala Glu Asp Pro Gln
 1475 1480 1485
 Arg Arg Val Ser Asp Leu Asp Val Leu Leu Asp Asp Ala Glu Arg
 1490 1495 1500
 Glu Arg Pro Ala Glu Ala Pro Ala Lys Trp Ser Glu Ala Val Pro
 1505 1510 1515
 Pro Val Ala Ala Asp Leu Ala Glu Gly Gly Pro Leu Gly Ala Leu
 1520 1525 1530
 Val Leu Asp Asp Arg Leu Arg Pro Ala Val Ala Val Gly Glu Leu
 1535 1540 1545
 Tyr Leu Thr Gly Ala Ala Val Asp Ala Glu Pro Gly Asp Arg Thr
 1550 1555 1560
 Leu Ala Cys Pro Phe Gly Ala Thr Gly Arg Arg Met Leu Pro Thr
 1565 1570 1575
 Gly Leu Leu Ala Arg Trp Thr Ala Gly Gly Thr Leu Val Val Val
 1580 1585 1590

Gly	Glu	Arg	Arg	Gly	Ser	Ser	Gly	Ser	Val	Lys	Thr	Gly	Thr	Gly
1595						1600					1605			
Asp	Phe	Glu	Val	Leu	Leu	Pro	Leu	Arg	Ala	Gly	Gly	Asn	Arg	Pro
1610						1615					1620			
Pro	Leu	Tyr	Cys	Val	His	Ala	Ser	Gly	Gly	Leu	Ser	Trp	Asn	Tyr
1625						1630					1635			
Ala	Pro	Leu	Leu	Arg	Ser	Leu	Pro	Pro	Asn	Gln	Pro	Val	Tyr	Gly
1640						1645					1650			
Val	Gln	Ala	Arg	Gly	Leu	Ala	Arg	Thr	Glu	Pro	Leu	Ala	Ala	Gly
1655						1660					1665			
Val	Glu	Glu	Met	Ala	Ala	Asp	Tyr	Val	Glu	Gln	Ile	Arg	Ala	Val
1670						1675					1680			
Gln	Pro	Thr	Gly	Pro	Tyr	His	Leu	Leu	Gly	Trp	Ser	Leu	Gly	Gly
1685						1690					1695			
Arg	Ile	Ala	Gln	Glu	Met	Ala	Arg	Val	Leu	Glu	Glu	Gln	Gly	Glu
1700						1705					1710			
Gln	Val	Gly	Leu	Leu	Ala	Leu	Leu	Asp	Ala	Tyr	Pro	Thr	Asp	Val
1715						1720					1725			
Gly	Arg	Leu	Arg	Arg	Pro	Arg	Gly	Asp	Ala	Ala	Asp	Gln	Glu	Ala
1730						1735					1740			
Ala	Asp	Phe	Asp	Arg	Gln	Gln	Glu	Gln	Gln	Ala	Gln	Leu	Ala	Ala
1745						1750					1755			
Ala	Val	Ala	Thr	Glu	Ala	Gly	Ala	Arg	Lys	Arg	Leu	Asp	Glu	Val
1760						1765					1770			
Met	Glu	His	Leu	Ala	Arg	Val	Gly	Pro	Leu	His	Thr	Ser	Arg	Ser
1775						1780					1785			
Phe	Gly	Cys	Asp	Ile	Leu	Leu	Phe	Val	Ala	Thr	Val	Asn	Arg	Pro
1790						1795					1800			
Ser	His	Leu	Pro	Val	Ala	Asp	Ala	Ile	Ala	Ser	Trp	Arg	Pro	Leu
1805						1810					1815			
Thr	Thr	Gly	Thr	Val	Glu	Pro	His	Glu	Ile	Glu	Ile	Asp	His	Met
1820						1825					1830			

Gln Met Leu Gln Pro Ala Ala Leu Ala Arg Ile Gly Ala Val Val
 1835 1840 1845

Ala Glu Lys Leu Arg Pro Arg Pro Asp Gly Glu Arg Thr Gln Arg
 1850 1855 1860

<210> 18
 <211> 4083
 <212> PRT
 <213> Nonomuria

<400> 18

Met Ala Gln Ser Arg Ile Glu Asp Phe Trp Pro Leu Ser Pro Leu Gln
 1 5 10 15

Gln Gly Leu Leu Phe His Thr Thr Tyr Asp Asp Asp Trp Pro Gly Leu
 20 25 30

Tyr Val Gly His Trp Ile Leu Asn Leu Asn Gly Pro Val Glu Ala Asp
 35 40 45

Arg Leu Arg Ala Ala Trp Glu Ala Leu Leu Ala Arg His Ala Ala Leu
 50 55 60

Arg Ala Cys Phe Arg Gln Arg Lys Ser Gly Glu Thr Val Gln Leu Ile
 65 70 75 80

Ala Arg Gln Val Glu Leu Pro Trp Arg Val Val Asp Leu Ser His Leu
 85 90 95

Ser Glu Pro Glu Glu Ala Val Arg Ala Val Ala Glu Glu Asp Arg Thr
 100 105 110

Arg Arg Phe Asp Leu Ala Lys Ala Pro Leu Leu Arg Leu Thr Leu Ile
 115 120 125

Arg Leu Ala Gly Asp Asp His Arg Leu Val Met Thr Cys His His Ala
 130 135 140

Ile Met Asp Gly Trp Ser Met Pro Ile Met Leu Asp Glu Leu Ser Met
 145 150 155 160

Leu Tyr Ala Ala Asp Gly Ser Pro Leu Asp Leu Pro Ala Val Pro Ser
 165 170 175

Tyr Arg Asp Tyr Leu Val Trp Leu Asp Arg Gln Asp Lys Glu Arg Thr
 180 185 190

Leu Ser Ala Trp Ala Ala Glu Leu Arg Gly Val Glu Glu Pro Thr Leu
 195 200 205

Val Ala Pro Ala Asp Ala Asn Arg Ala Pro Ala Met Pro Glu Asn Ile
 210 215 220

Thr Val Glu Leu Pro Glu Asp Leu Thr Arg Ala Leu Ser Glu Leu Ala
 225 230 235 240

Arg Thr His Gly Leu Thr Leu Asn Thr Val Val Gln Gly Ala Trp Ala
 245 250 255

Leu Leu Leu Ala Gln Leu Ala Gly Arg Thr Asp Val Val Phe Gly Ala
 260 265 270

Ala Val Ser Ala Arg Pro Pro Asp Leu Pro Gly Val Glu Gly Met Val
 275 280 285

Gly Leu Phe Leu Asn Thr Val Pro Val Arg Val Arg Leu Ser Gly Ser
 290 295 300

Thr Pro Val Ile Glu Phe Leu Ala Asp Leu Gln Lys Arg Gln Ser Ala
 305 310 315 320

Leu Ile Pro His Gln Tyr Met Gly Leu Ala Asp Ile Gln Arg Thr Ala
 325 330 335

Gly Ala Gly Ala Val Phe Asp Thr Leu Leu Val Phe Gln Asn Phe Pro
 340 345 350

Arg Glu Leu Arg Pro Ser Asp Ala Ala Ala Ala Phe Asp Ile Arg Ile
 355 360 365

Asp Gln Gly Arg Glu Ala Ala His Tyr Pro Leu Thr Leu Val Ala Val
 370 375 380

Pro Gly Glu Ser Met Leu Leu Asn Leu Asp His Val Thr Asp Leu Phe
 385 390 395 400

Asp Arg Glu Ala Ala Leu Ala Ile Leu Glu Arg Phe Thr Gly Ile Leu
 405 410 415

Arg Gln Leu Ala Gly Ala Gly Asp Leu Thr Val Ala Glu Val Asp Val
 420 425 430

Thr Ser Ala Ala Glu Arg Ala Leu Val Val Asn Ala Trp Ser Ala Ala

435

440

445

Pro Arg Val Ala Pro Gly Glu Leu Ala Pro Asp Leu Phe Asp Arg Gln
450 455 460

Val Glu Arg Gly Arg Asp Arg Val Ala Val Val Glu Gly Lys Arg Ala
465 470 475 480

Val Ser Phe Gly Glu Leu Ala Glu His Ala Glu Arg Leu Ala Gly Tyr
485 490 495

Leu Ser Gly Arg Gly Val Arg Arg Gly Asp Arg Val Ala Val Val Met
500 505 510

Gly Arg Ser Pro Gly Leu Ile Ala Thr Leu Leu Ala Val Trp Lys Ala
515 520 525

Gly Ala Ala Phe Val Pro Val Asp Pro Ala Tyr Pro Ala Glu Arg Val
530 535 540

Gln Phe Met Leu Ala Asp Ala Glu Pro Ala Ala Val Val Thr Glu Arg
545 550 555 560

Ala Cys Gln Ala Ala Val Pro Ala Gly Gly Leu Asp Pro Ile Val Leu
565 570 575

Asp Asp Pro Asp Thr Leu Arg Ala Val Ala Glu His Ala Arg Leu Ser
580 585 590

Ala Gly Ala His Ala Asp Asp Leu Ala Tyr Val Met Tyr Thr Ser Gly
595 600 605

Ser Thr Gly Arg Pro Lys Gly Val Ala Val Ser His Gly Asn Val Ala
610 615 620

Ala Leu Ala Gly Glu Pro Gly Trp Gly Leu Gly Pro Glu Asp Ala Val
625 630 635 640

Leu Met His Ala Ser His Ala Phe Asp Ile Ser Leu Phe Glu Leu Trp
645 650 655

Val Pro Leu Leu Ser Gly Ala Arg Val Val Leu Ala Glu Pro Gly Ala
660 665 670

Val Asp Gly Glu Ala Leu Ala Gly Tyr Val Ala Gly Gly Val Thr Cys
675 680 685

Ala His Leu Thr Ala Gly Thr Phe Arg Val Leu Ala Glu Glu Ser Pro
 690 695 700

Glu Ser Val Ala Gly Leu Arg Glu Val Leu Thr Gly Gly Asp Ala Val
 705 710 715 720

Pro Leu Ala Ala Val Glu Arg Val Arg Arg Ala Cys Pro Asp Val Arg
 725 730 735

Val Arg His Leu Tyr Gly Pro Thr Glu Ala Thr Leu Cys Ala Thr Trp
 740 745 750

Trp Leu Leu Gln Pro Gly Glu Pro Thr Gly Pro Val Leu Pro Ile Gly
 755 760 765

Arg Pro Leu Ala Gly Arg Arg Val Tyr Val Leu Asp Ala Phe Leu Arg
 770 775 780

Pro Val Pro Pro Gly Val Thr Gly Glu Leu Tyr Val Ala Gly Ala Gly
 785 790 795 800

Val Ala Gln Gly Tyr Leu Gly Arg Pro Ala Leu Thr Ala Glu Arg Phe
 805 810 815

Val Ala Glu Pro Phe Val Pro Gly Gly Arg Met Tyr Arg Thr Gly Asp
 820 825 830

Leu Ala Arg Trp Thr Asp Gln Gly Glu Leu Ala Phe Ala Gly Arg Ala
 835 840 845

Asp Asp Gln Val Lys Ile Arg Gly Tyr Arg Val Glu Pro Gly Glu Ile
 850 855 860

Glu Ala Val Leu Ala Gly Leu Pro Gly Val Gly Gln Ala Val Val Ser
 865 870 875 880

Ala Arg Glu Glu Arg Leu Ile Gly Tyr Val Val Ala Glu Thr Gly Gly
 885 890 895

Asp Leu Asp Pro Val Arg Ile Arg Glu Gln Leu Ala Ala Thr Leu Pro
 900 905 910

Glu Phe Met Val Pro Ala Ala Val Leu Val Leu Asp Ala Leu Pro Leu
 915 920 925

Thr Gly Asn Gly Lys Val Asp Arg Arg Ala Leu Pro Glu Pro Asp Phe
 930 935 940

Ala Ala Gly Ala Val Asp Arg Glu Pro Ala Thr Asp Ala Glu Arg Ile
 945 950 955 960

Leu Cys Gly Val Phe Ala Glu Val Leu Gly Ala Gly Arg Val Gly Val
 965 970 975

Ala Asp Ser Phe Phe Glu Leu Gly Gly Asp Ser Ile Ser Ser Met Gln
 980 985 990

Val Ala Ala Arg Ala Arg Arg Gln Gly Ile Pro Leu Thr Pro Arg Gln
 995 1000 1005

Val Phe Glu His Arg Thr Pro Glu Arg Leu Ala Ala Leu Ala Gln
 1010 1015 1020

Gln Ala Pro Gly Arg Arg Ala Ser Ser Val Glu Pro Gly Val Gly
 1025 1030 1035

Glu Ile Pro Arg Thr Pro Val Met Arg Ala Leu Gly Asp Asp Ala
 1040 1045 1050

Val Arg Pro Gly Phe Ala Gln Ala Arg Val Val Val Thr Pro Ala
 1055 1060 1065

Gly Phe Ala Pro Asp Ala Leu Val Thr Ala Leu Gln Ala Val Leu
 1070 1075 1080

Asp Val His Asp Leu Leu Arg Thr Arg Val Glu Pro Asp Gly Arg
 1085 1090 1095

Leu Met Val Ala Glu Pro Gly Ala Val Asp Ala Ala Gly Leu Val
 1100 1105 1110

Thr Arg Val Ala Ala Gly Asn Gly Asn Leu Ala Glu Arg Ala Glu
 1115 1120 1125

Arg Glu Ala Arg Thr Ala Ala Gly Thr Leu Asp Pro Ser Glu Gly
 1130 1135 1140

Ile Met Val Arg Ala Val Trp Val Asp Ala Gly Asp Ala Glu Pro
 1145 1150 1155

Gly Arg Leu Ala Leu Val Val His His Leu Val Val Asp Ala Val
 1160 1165 1170

Ser Trp Ala Ile Leu Leu Ser Asp Leu Arg Ala Ala Tyr Asp Glu
 1175 1180 1185

Ala Val	Ser Gly Gly Thr	Pro Val	Leu Glu Pro	Ala Val	Thr Ser
1190		1195		1200	
Tyr Arg	Gln Trp Ala Arg	Arg Leu	Ala Gly Gln	Ala Leu	Ser Glu
1205		1210		1215	
Ser Thr	Val Ala Glu Ala	Gly His	Trp Ala Gly	Val Leu	Glu Gly
1220		1225		1230	
Gly Asp	Leu Pro Leu Glu	Arg His	Pro Gly Gln	Ser Ala	Ser Trp
1235		1240		1245	
Ser Arg	Thr Leu Ser Asp	Ala Gln	Ala Arg Asn	Leu Val	Ala Arg
1250		1255		1260	
Val Pro	Ala Ala Phe His	Cys Gly	Val Gln Asp	Val Leu	Leu Ala
1265		1270		1275	
Gly Leu	Ala Gly Ala Val	Ala Arg	Trp Arg Gly	Ala Asp	Ala Gly
1280		1285		1290	
Ile Leu	Val Asp Val Glu	Gly His	Gly Arg His	Ala Ala	Asp Gly
1295		1300		1305	
Glu Asp	Leu Leu Arg Thr	Val Gly	Trp Phe Thr	Ser Val	His Pro
1310		1315		1320	
Val Arg	Leu Asp Val Ser	Gly Val	Gly Pro Gly	Ala Ala	Ala Ala
1325		1330		1335	
Gly Glu	Leu Leu Lys Ala	Val Lys	Glu Gln Ala	Arg Ala	Val Pro
1340		1345		1350	
Gly Asp	Gly Leu Gly Tyr	Gly Leu	Leu Arg Tyr	Leu Asn	Pro Glu
1355		1360		1365	
Thr Gly	Ala Arg Leu Ala	Glu Leu	Pro Ser Ala	Gln Ile	Gly Phe
1370		1375		1380	
Asn Tyr	Leu Gly Arg Ser	Gly Val	Ala Ser Glu	Asp Thr	Ala Trp
1385		1390		1395	
Gln Val	Cys Glu Gly Ala	Leu Gly	Gly Gln Ala	Ala Gly	Pro Asp
1400		1405		1410	
Leu Val	Gln Ser His Ala	Leu Glu	Val Gly Ala	Asp Val	Gln Asp
1415		1420		1425	

Thr Pro Ala Gly Pro Arg Leu Arg Leu Ala Ile Asp Gly Arg Asp
 1430 1435 1440

Leu Asp Pro Ala Ala Val Glu Arg Leu Gly Glu Ala Trp Leu Asp
 1445 1450 1455

Thr Leu Ala Gly Leu Ala Ala Leu Ala Asp Thr Pro Gly Ala Gly
 1460 1465 1470

Gly His Thr Pro Ser Asp Phe Glu Leu Val Glu Val Arg Gln Arg
 1475 1480 1485

Asp Val Asp Glu Leu Glu Ala Val Ala Pro Gly Leu Thr Asp Val
 1490 1495 1500

Trp Pro Leu Ser Pro Leu Gln Glu Gly Ile Leu Phe Glu Arg Ala
 1505 1510 1515

Phe Asp Glu Asp Gly Val Asp Val Tyr Gln Thr Gln Arg Ile Leu
 1520 1525 1530

Asp Leu Asp Gly Pro Leu Asp Ala Gln Arg Leu His Ala Ala Trp
 1535 1540 1545

Gln Ser Val Ile Asp Arg His Glu Thr Leu Arg Thr Gly Phe His
 1550 1555 1560

Gln Leu Gly Ser Gly Glu Thr Val Gln Val Val Val Gly Glu Ala
 1565 1570 1575

Glu Val Leu Trp Arg Glu Ala Asp Leu Ser Arg Leu Asp Glu Pro
 1580 1585 1590

Asp Ala Glu Val Glu Arg Leu Leu Ala Ala Asp Gln Ala Glu Arg
 1595 1600 1605

Phe Asp Val Ser Arg Ala Pro Leu Leu Arg Leu Leu Leu Ile Arg
 1610 1615 1620

Leu Gly Ala Ala Arg His Arg Leu Val Val Thr Ser His His Val
 1625 1630 1635

Leu Val Asp Gly Trp Ser Thr Pro Ile Leu Leu Gly Glu Met Leu
 1640 1645 1650

Thr Ala Tyr Ala Asp Gly Arg Val Ser Pro Ala Pro Pro Ser Tyr
 1655 1660 1665

Arg Asp Tyr Val Ala Trp Leu Ser Arg Gln Asp Glu Asp Ala Ala
 1670 1675 1680

Arg Ser Ala Trp Arg Ala Glu Leu Ala Gly Leu Asp Glu Pro Thr
 1685 1690 1695

Val Val Gly Leu Asp Ala Gly Lys Ala Pro Val Met Pro Asp Gly
 1700 1705 1710

His Ala Glu Trp Leu Ser Glu Glu Ala Thr Arg Ala Leu Thr Gly
 1715 1720 1725

Phe Ala Arg Gly His Gly Leu Thr Leu Ser Thr Val Val Gln Gly
 1730 1735 1740

Ala Trp Ala Leu Val Leu Ala Arg Leu Ala Arg Arg Thr Asp Val
 1745 1750 1755

Val Phe Gly Thr Val Val Ser Gly Arg Pro Ala Asp Ala Leu Pro
 1760 1765 1770

Asp Val Glu Arg Met Val Gly Met Phe Ile Asn Thr Val Pro Val
 1775 1780 1785

Arg Val Arg Leu Asp Gly Ala Val Pro Val Leu Asp Leu Leu Gln
 1790 1795 1800

Asp Leu Gln Arg Arg Gln Ser Ser Leu Thr Glu His Gln His Leu
 1805 1810 1815

Gly Leu Pro Glu Ile Gln Lys Ala Ala Gly Pro Gly Ser Ile Phe
 1820 1825 1830

Asp Thr Ile Leu Met Ile Val Asn Tyr Pro Leu Asp Ala Asp Gly
 1835 1840 1845

Leu Asp Asp Gly Gly Val Ala Ile Ser Ser Ile Arg Thr Arg Thr
 1850 1855 1860

Gly Thr Thr Tyr Pro Leu Ser Val Ser Val Ile Pro Gly Ala Arg
 1865 1870 1875

Leu Gln Ile Gln Leu Asp Tyr Arg Pro Asp Trp Ile Gly Gly Asp
 1880 1885 1890

Leu Ala Ala Glu Ile Thr Gly Gln Val Val Arg Val Leu Ala Arg

1895	1900	1905
Met Val Ala Glu Pro Ser Leu 1910	Pro Val Gly Arg Leu 1915	Ala Val Thr 1920
Ser Arg Ser Thr Arg Gly Ser 1925	Val Thr Glu Arg Trp 1930	Asn Ser Thr 1935
Gly Ala Ala Ala Gly Gly Ser 1940	Ser Val Pro Glu Leu 1945	Phe Arg Arg 1950
Gln Ala Asp Ala Ala Pro Asp 1955	Ala Thr Ala Val Ile 1960	Gly Asp Gly 1965
Arg Thr Leu Ser Tyr Ala Gly 1970	Leu Asp Arg Glu Ser 1975	Asp Arg Leu 1980
Ala Gly His Leu Ala Arg Arg 1985	Gly Val Arg Arg Gly 1990	Asp Arg Val 1995
Gly Val Leu Met Glu Arg Gly 2000	Ala Asp Leu Ile Val 2005	Ala Leu Leu 2010
Ala Val Trp Lys Ala Gly Ala 2015	Ala Gln Val Pro Val 2020	Asn Val Asp 2025
Tyr Pro Ala Glu Arg Ile Glu 2030	Arg Met Leu Ala Asp 2035	Ala Gly Ala 2040
Ser Val Ala Val Cys Ala Gly 2045	Ala Thr Arg His Ala 2050	Val Pro Asp 2055
Gly Ile Glu Pro Val Val Met 2060	Asp Ala Pro Ala Thr 2065	Glu Ala Glu 2070
Arg His Glu Ala Pro Pro Leu 2075	Ala Val Gly Ala His 2080	Asp Val Ala 2085
Tyr Val Met Tyr Thr Ser Gly 2090	Ser Thr Gly Val Pro 2095	Lys Gly Val 2100
Ala Val Pro His Gly Ser Ala 2105	Ala Ala Leu Ala Gly 2110	Asp Pro Gly 2115
Trp Ser Gln Gly Ala Gly Asp 2120	Arg Val Leu Met His 2125	Ala Ser His 2130

Ala Phe	Asp Ala	Ser Leu	Leu	Glu Ile	Trp Val	Pro	Leu Val	Ser
2135			2140			2145		
Gly Ala	Cys Val	Met Val	Ala	Glu Pro	Gly Ala	Ile	Asp Ala	Gln
2150			2155			2160		
Arg Leu	Arg Asp	Val Ile	Ala	Arg Gly	Ala Thr	Thr	Val His	Leu
2165			2170			2175		
Thr Ala	Gly Thr	Phe Arg	Val	Leu Ala	Glu Glu	Ser	Pro Asp	Ser
2180			2185			2190		
Phe Ser	Gly Leu	Arg Glu	Val	Leu Thr	Gly Gly	Asp	Val Val	Pro
2195			2200			2205		
Leu Glu	Ser Val	Ala Arg	Val	Arg Arg	Ala Cys	Pro	Glu Val	Arg
2210			2215			2220		
Val Arg	Glu Leu	Tyr Gly	Pro	Thr Glu	Val Thr	Leu	Cys Ala	Thr
2225			2230			2235		
Trp His	Leu Ile	Glu Pro	His	Thr Glu	Thr Gly	Asp	Thr Leu	Pro
2240			2245			2250		
Ile Gly	Arg Pro	Leu Ala	Gly	Arg Gln	Val Tyr	Val	Leu Asp	Ala
2255			2260			2265		
Phe Leu	Gln Pro	Val Ala	Pro	Asn Val	Thr Gly	Glu	Leu Tyr	Leu
2270			2275			2280		
Ala Gly	Ala Gly	Leu Ala	His	Gly Tyr	Leu Gly	Ala	Pro Ala	Ala
2285			2290			2295		
Thr Ser	Glu Arg	Phe Ile	Ala	Val Pro	Ala Ser	Val	Asn Pro	Ala
2300			2305			2310		
Ala Ser	Gly Glu	Arg Met	Tyr	Arg Thr	Gly Asp	Leu	Ala Arg	Trp
2315			2320			2325		
Thr Asp	Arg Gly	Glu Leu	Leu	Phe Ala	Gly Arg	Ala	Asp Ser	Gln
2330			2335			2340		
Val Lys	Ile Arg	Gly Tyr	Arg	Val Glu	Pro Gly	Glu	Ile Glu	Ala
2345			2350			2355		
Ala Leu	Ala Glu	Val Pro	His	Val Ala	Gln Ala	Val	Val Val	Ala
2360			2365			2370		

Arg Glu Asp Arg Pro Gly Glu Lys Arg Leu Ile Ala Tyr Val Thr
2375 2380 2385

Ala Glu Glu Gly Ser Gly Leu Asp Pro Asp Ala Val Arg Glu His
2390 2395 2400

Leu Ala Gly Arg Leu Pro Glu Phe Met Val Pro Ala Ala Val Val
2405 2410 2415

Leu Leu Asp Gly Val Pro Leu Thr Pro Asn Gly Lys Ile Asp Arg
2420 2425 2430

Ala Ala Leu Pro Val Pro Glu Phe Thr Gly Lys Ala Ala Gly Arg
2435 2440 2445

Glu Pro Arg Thr Glu Ala Glu Arg Val Leu Cys Glu Leu Phe Ala
2450 2455 2460

Glu Val Leu Gly Val Ala Arg Ala Gly Ala Glu Asp Ser Phe Phe
2465 2470 2475

Glu Leu Gly Gly Asp Ser Ile Leu Ser Met Arg Leu Ala Ala Arg
2480 2485 2490

Ala Arg Arg Glu Glu Leu Val Phe Gly Ala Lys Asp Val Phe Glu
2495 2500 2505

Arg Lys Thr Pro Ala Gly Ile Ala Met Val Ala Glu Arg Gly Gly
2510 2515 2520

Ala Thr Arg Ala Ser Leu Asp Asp Gly Val Gly Glu Val Met Ser
2525 2530 2535

Thr Pro Val Ile Arg Ala Leu Leu Glu Arg Asp Pro Asp Ala Met
2540 2545 2550

Thr Arg Gly Ala Leu Ser Gln Trp Val Thr Ala Gly Ala Pro Asp
2555 2560 2565

Asp Leu Ser Val Asp Val Leu Ala Ala Gly Leu Gly Ala Val Ile
2570 2575 2580

Asp Ala His Asp Met Leu Arg Ser Arg Ile Val Arg Thr Gly Ala
2585 2590 2595

Ala Gln Pro Arg Leu Val Val Ala Gly Arg Gly Ala Val Asp Ala
2600 2605 2610

Ala Thr Leu Val Glu Arg Val Glu Ala Gly Thr Gly Asp Val Asp
 2615 2620 2625

Glu Ile Ala Asp Arg Cys Ala Arg Asp Ala Ala Ala Arg Leu Asp
 2630 2635 2640

Pro His Ala Gly Val Met Ile Arg Ala Val Trp Val Asp Ala Gly
 2645 2650 2655

Pro Gly Arg Val Gly Arg Leu Val Val Ala Ala His His Leu Val
 2660 2665 2670

Val Asp Val Val Ser Trp Arg Ile Leu Leu Pro Asp Leu Gln Val
 2675 2680 2685

Ala Cys Glu Ala Val Ala Ala Gly Arg Arg Pro Val Leu Asp Pro
 2690 2695 2700

Val Asp Val Ser Phe Arg Arg Trp Ala Arg Thr Leu Ala Asp Gln
 2705 2710 2715

Ala Val Thr Arg Ala Thr Glu Leu Glu Thr Trp Thr Glu Ile Leu
 2720 2725 2730

Asp Gly Ala Arg Ser Arg Leu Gly Glu Leu Asp Pro Ala Arg Asp
 2735 2740 2745

Thr Val Ser Thr Ala Gly Arg Thr Ser Trp Thr Leu Pro His Asp
 2750 2755 2760

Arg Ala Gly Val Leu Val Glu Gln Ala Thr Ser Ala Phe His Cys
 2765 2770 2775

Gly Val His Glu Val Leu Leu Ala Thr Leu Ala Gly Ala Val Ala
 2780 2785 2790

His Trp Arg Gly Gly Thr Ala Val Val Val Asp Val Glu Gly His
 2795 2800 2805

Gly Arg Arg Pro Ile Asp Glu Leu Asp Leu Ser Arg Thr Val Gly
 2810 2815 2820

Trp Phe Thr Asp Val His Pro Leu Arg Leu Asp Val Thr Gly Ile
 2825 2830 2835

Asp Pro Ala Glu Val Ile Ala Gly Gly Gly Ala Ala Gly His Leu

2840

2845

2850

Leu Lys Gln Val Lys Glu Asn Val Arg Ala Val Pro Asp Gly Gly
 2855 2860 2865

Leu Gly Tyr Gly Ile Leu Arg Tyr Leu Asn Ala Gly Thr Gly Gln
 2870 2875 2880

Ala Leu Ala Ala Ala Pro Lys Pro Glu Ile Gly Phe Asn Tyr Leu
 2885 2890 2895

Gly Arg Phe Pro Ser Arg Ser Ala Gly Ala Pro Glu Pro Trp Gln
 2900 2905 2910

Leu Leu Gly Thr Ile Gly Gly Thr Ala Glu Gln Asp Thr Ala Leu
 2915 2920 2925

Arg His Ala Val Glu Ile Asp Ala Ala Val Leu Asp Gly Ala Ala
 2930 2935 2940

Gly Pro Glu Leu Ser Leu Thr Val Thr Trp Ala Gly Arg Leu Leu
 2945 2950 2955

Gly Glu Ala Glu Ala Glu Ser Leu Ala Gln Ala Trp Leu Ala Met
 2960 2965 2970

Leu Thr Gly Leu Ala Ala His Val Gly Gly Gly Gly Ala Gly Gly
 2975 2980 2985

His Thr Pro Ser Asp Phe Pro Leu Ile Ser Leu Thr Gln Gln Asp
 2990 2995 3000

Val Ala Glu Val Glu Ala Ala Val Pro Thr Leu Leu Asp Ile Trp
 3005 3010 3015

Pro Leu Ser Pro Leu Gln Glu Gly Leu Leu Phe His Ala Ala Asp
 3020 3025 3030

Glu Arg Gly Pro Asp Val Tyr Ala Gly Met Arg Lys Leu Ala Leu
 3035 3040 3045

Asp Gly Pro Leu Asp Val Ala Arg Phe Arg Ala Ser Trp Gln Ala
 3050 3055 3060

Leu Leu Asp Arg His Pro Ala Leu Arg Ala Ser Phe His Gln Leu
 3065 3070 3075

Gly Ser	Gly Ala Ala Val	Gln	Ala Ile Ala Arg	Glu	Val Pro Leu
3080		3085		3090	
Asp Trp	Gln Glu Thr Asp	Leu	Ser Arg Leu Pro	Glu	Asp Glu Ala
3095		3100		3105	
Leu Ala	Glu Phe Asp Arg	Leu	Ala Glu Gln Leu	His	Thr Glu Arg
3110		3115		3120	
Phe Asp	Leu Thr Arg Ala	Pro	Gln Leu Arg Leu	His	Leu Val Arg
3125		3130		3135	
Leu Gly	Glu Arg Arg His	Arg	Leu Val Leu Thr	Ser	His His Ile
3140		3145		3150	
Val Ala	Asp Gly Trp Ser	Leu	Pro Leu Ile Thr	Glu	Asp Val Leu
3155		3160		3165	
Thr Val	Tyr Glu Ser Gly	Gly	Asp Gly Arg Ala	Leu	Pro Ala Ala
3170		3175		3180	
Thr Ser	Tyr Arg Asp Tyr	Leu	Ala Trp Ile Ala	Arg	Gln Asp Lys
3185		3190		3195	
Ala Ala	Ala Arg Glu Ala	Trp	Arg Ala Glu Leu	Ala	Gly Leu Asp
3200		3205		3210	
Glu Ala	Thr His Val Val	Pro	Pro Glu Thr Ile	Thr	Thr Pro Leu
3215		3220		3225	
Glu Pro	Glu Arg Val Gly	Phe	Glu Leu Asp Glu	Ala	Leu Ser Arg
3230		3235		3240	
Arg Val	Val Glu Phe Thr	Gly	Arg His Gly Val	Thr	Ala Asn Thr
3245		3250		3255	
Leu Phe	Gln Gly Ile Trp	Ala	Leu His Leu Ala	Arg	Leu Thr Gly
3260		3265		3270	
Arg Asp	Asp Val Val Phe	Gly	Ala Ala Val Ala	Gly	Arg Pro Pro
3275		3280		3285	
Glu Ile	Pro Gly Val Glu	Ser	Ala Val Gly Leu	Phe	Met Asn Met
3290		3295		3300	
Leu Pro	Val Arg Ala Arg	Leu	Ala Gly Ala Glu	Pro	Phe Leu Asp
3305		3310		3315	

Met Leu Thr Asp Leu Gln Glu Arg Gln Val Ala Cys Met Pro His	3320	3325	3330
Gln His Val Gly Leu Ser Glu Ile Asn Gln Leu Ala Gly Pro Gly	3335	3340	3345
Ala Ala Phe Asp Thr Ile Val Val Phe Glu Asn Tyr Pro Pro Pro	3350	3355	3360
Pro Pro Arg Pro Glu Gly Pro Asp Ala Leu Val Met Arg Pro Ala	3365	3370	3375
Gly Ile Pro Asn Asp Thr Gly His Tyr Pro Leu Ser Met Arg Ala	3380	3385	3390
Ser Val Ala Gly Arg Val His Gly Glu Phe Ile Tyr Arg Pro Asp	3395	3400	3405
Val Val Asp Arg Ala Glu Ala Glu Glu Met Leu Ala Ser Ile Leu	3410	3415	3420
Arg Ala Leu Glu Gln Val Val Ala Glu Pro Arg Val Pro Val Gly	3425	3430	3435
Arg Val Gly Leu Ile Gly Pro Glu Gln Arg Arg Leu Val Val Glu	3440	3445	3450
Glu Trp Asn Arg Thr Gly Val Pro Pro Ala Ala Glu Pro Val Pro	3455	3460	3465
Met Leu Phe Arg Arg Gln Val Glu Arg Ser Pro Asp Ala Val Ala	3470	3475	3480
Val Val Asp Ala Ala Arg Ser Leu Ser Tyr Ser Gly Leu Leu Asp	3485	3490	3495
Glu Ala Glu Glu Leu Ala Arg Leu Leu Val Gly Leu Gly Val Arg	3500	3505	3510
Arg Glu Thr Arg Val Gly Val Leu Val Gly Arg Ser Ala Glu Leu	3515	3520	3525
Val Val Ala Leu Leu Gly Val Ser Ser Ala Gly Gly Val Phe Val	3530	3535	3540
Pro Met Asp Pro Asp Tyr Pro Arg Glu Arg Ile Ser Phe Ile Leu	3545	3550	3555

Ala Asp 3560	Ser Ala Pro Glu Val 3565	Leu Leu Cys Thr Ser 3570	Glu Thr Arg
Gln Ala 3575	Val Pro Glu Glu Phe 3580	Ala Gly Ala Val Val 3585	Ala Leu Asp
Ala Pro 3590	Leu Ala Ala Asp Pro 3595	Arg Thr Ala Leu Pro 3600	Arg Val Glu
Ala Gly 3605	Asp Gly Ala Tyr Val 3610	Ile Tyr Thr Ser Gly 3615	Ser Thr Gly
Val Pro 3620	Lys Gly Val Leu Val 3625	Pro His Ala Gly Leu 3630	Gly Asn Leu
Ala Ser 3635	Ala Gln Ile Glu Arg 3640	Phe Gly Val Thr Ser 3645	Ala Ser Arg
Ile Leu 3650	Gln Phe Ala Ala Leu 3655	Gly Phe Asp Ala Ala 3660	Val Ser Glu
Leu Cys 3665	Met Ala Leu Leu Ser 3670	Gly Gly Thr Val Val 3675	Leu Ala Asp
Ala Glu 3680	Ser Met Pro Pro Arg 3685	Val Ser Leu Gly Asp 3690	Ala Val Arg
Arg Trp 3695	Gly Ile Thr His Val 3700	Thr Val Pro Pro Ser 3705	Val Pro Ala
Val Glu 3710	Asp Asp Leu Pro Asp 3715	Ser Leu Glu Thr Leu 3720	Val Val Ala
Gly Glu 3725	Ala Cys Pro Pro Ala 3730	Leu Val Asp Arg Trp 3735	Ser Pro Gly
Arg Arg 3740	Met Ile Asn Ala Tyr 3745	Gly Pro Thr Glu Thr 3750	Thr Val Cys
Ala Thr 3755	Met Ser Ser Pro Leu 3760	Ser Pro Gly Arg Asp 3765	Val Val Pro
Ile Gly 3770	Arg Pro Ile Thr Gly 3775	Leu Arg Ala Tyr Val 3780	Leu Asp Ala
Phe Leu	Gln Pro Val Pro Pro	Gly Val Thr Gly Glu	Leu Tyr Val

3785

3790

3795

Ala Gly Ala Gly Leu Ala Arg Gly Tyr Leu Gly Arg Pro Gly Leu
 3800 3805 3810

Thr Ala Glu Arg Phe Val Ala Val Pro Ala Ser Val Ser Pro Ala
 3815 3820 3825

Arg Pro Gly Glu Arg Met Tyr Arg Thr Gly Asn Arg Ala Arg Trp
 3830 3835 3840

Thr Arg Asp Gly Glu Leu Val Phe Thr Gly Arg Ala Asp Ala Gln
 3845 3850 3855

Val Lys Val Arg Gly Tyr Arg Ile Glu Pro Gly Glu Ile Glu Ala
 3860 3865 3870

Val Leu Ala Asp His Pro Gly Val Ala Gln Val Ala Val Val Ala
 3875 3880 3885

Arg Glu Asp Gly Pro Gly Gln Lys Tyr Leu Val Ala Tyr Val Val
 3890 3895 3900

Pro Ala Ala Glu Gln Val Ala Gly Ala Pro Ser Glu Ala Gly Gln
 3905 3910 3915

Asp Gly Ala Leu Ile Ser Ala Leu Arg Glu Ser Ala Ala Gly Arg
 3920 3925 3930

Leu Pro Glu His Met Arg Pro Ala Ala Phe Val Pro Leu Asp Thr
 3935 3940 3945

Met Pro Leu Thr Pro Asn Gly Lys Val Asp His Arg Ala Leu Arg
 3950 3955 3960

Ala Pro Asp Phe Ala Arg Ser Ser Ser Gly Arg Asp Pro Arg Ser
 3965 3970 3975

Ala Met Glu Ala Lys Leu Cys Glu Leu Phe Ala Glu Val Leu Gly
 3980 3985 3990

Leu Glu Glu Val Gly Ala Gly Asp Ser Phe Phe Glu Leu Gly Gly
 3995 4000 4005

Asp Ser Ile Thr Ser Met Gln Leu Ser Ala Leu Ala Arg Arg Lys
 4010 4015 4020

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Gly Leu Asp Leu Thr Pro Trp Gln Val Phe Asp Glu Lys Thr Ala
 4025 4030 4035

Glu Arg Leu Ala Ala Val Val Lys Glu Leu Pro Ala Asp Gly Glu
 4040 4045 4050

Gly Thr Gly Glu Pro Glu Pro Pro Ala Gly Thr Leu Val Asp Leu
 4055 4060 4065

Ser Pro Asp Gln Leu Asp Gln Leu Glu Ala Gly Pro Ala Gly Gly
 4070 4075 4080

<210> 19

<211> 753

<212> PRT

<213> Nonomuria

<400> 19

Met Ala Gly Phe Gly Ala Pro Phe Arg Asn Ser Asp His Val Val Ser
 1 5 10 15

Lys Leu Thr Asn Glu Asp Ala Phe Glu Leu Val Glu Arg His Gly Ala
 20 25 30

Asn Ala Ser Pro Leu Gly Arg Ala Met Leu Thr Val Arg Ala Gly Asp
 35 40 45

Arg Ser Tyr Pro Glu Met Gly Val Gly Pro Val Ala Glu Ser Lys Asp
 50 55 60

Leu Arg Trp Gln Gln Leu Thr Ser Gly Arg Phe Pro Glu Arg Lys Gly
 65 70 75 80

Glu Ala Val Val Asp Leu Trp Asp Ala Gln Asn Trp Asp Val Ala Val
 85 90 95

Gly Asp Arg Ile Arg Ile Gly Glu Arg Ala Thr Ala Ala Asp Phe Thr
 100 105 110

Val Val Gly Ile Val Arg Ala Pro Ser Pro Val Ala Gln Ala Ser Val
 115 120 125

Tyr Val Thr Trp Pro Gln Leu Met Arg Trp Ala Asp Asp Pro Ser Leu
 130 135 140

Gly Ile Tyr Thr Val Thr Val Arg Gly Ala Val Gly Pro Val Pro Glu
 145 150 155 160

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Thr Ala Lys Val Gln Thr Pro Glu Gln Glu Ile Ala Ala Arg Thr Ala
 165 170 175

Gln Leu Gln Asn Gly Val Asp Thr Trp Ser Leu Leu Leu Leu Leu Phe
 180 185 190

Ala Gly Ile Ala Val Phe Val Ser Ile Leu Val Ile Ala Asn Thr Phe
 195 200 205

Ser Ile Leu Leu Ala Gln Arg Met Arg Asp Phe Ala Leu Leu Arg Cys
 210 215 220

Val Gly Ala Thr Arg Arg Gln Val Val Ser Ser Val Arg Arg Glu Ala
 225 230 235 240

Ala Val Val Gly Leu Leu Ser Ser Leu Ala Gly Val Leu Val Gly Ala
 245 250 255

Gly Leu Gly Tyr Gly Leu Ile Ala Leu Ile Lys Thr Leu Ser Pro Ile
 260 265 270

Thr Pro Ile Ala Ala Pro Ala Pro Pro Ala Pro Trp Leu Leu Gly Gly
 275 280 285

Leu Ala Ile Gly Leu Thr Ala Thr Leu Val Ala Ala Trp Leu Pro Ile
 290 295 300

Arg Arg Val Val Arg Val Ser Pro Leu Ala Ala Leu Arg Pro Asp Thr
 305 310 315 320

Ala Thr Asp Pro Arg Thr Ala Thr Gly Arg Ala Arg Leu Val Leu Gly
 325 330 335

Val Phe Met Leu Ile Ala Gly Leu Val Leu Leu Ala Ser Ala Met Ala
 340 345 350

Trp His Ser Thr Val Leu Met Leu Ala Gly Gly Gly Ser Leu Phe Thr
 355 360 365

Gly Val Leu Leu Phe Gly Pro Val Leu Ile Pro Arg Leu Leu Glu Ile
 370 375 380

Thr Gly Thr Arg Leu Gly Thr Ile Gly Arg Leu Ala Thr Lys Asn Ala
 385 390 395 400

Val Arg Asn Pro Arg Arg Thr Ala Thr Thr Ala Ala Ser Leu Leu Val
 405 410 415

Gly Ile Thr Leu Ile Thr Ala Val Leu Thr Gly Val Ala Ile Thr Ser
 420 425 430

Glu Ala Leu Asn Glu Arg Leu Asp Gly Gln His Pro Ile Asp Ala Ala
 435 440 445

Leu Val Ser Thr Gly Lys Pro Phe Ser Ala Asp Phe Leu Asp Lys Val
 450 455 460

Arg Gly Thr Ser Gly Val Asp Gln Ala Ile Ala Val Asp Gly Ala Val
 465 470 475 480

Ala Thr Val Ser Gly Leu Asp Lys Pro Ile Pro Val Val Thr Ala Pro
 485 490 495

Asp Ala Gln Arg Val Ala His Asp Gly Gly Ser Phe Ala Arg Val Glu
 500 505 510

Pro Gly Val Leu Arg Leu Asp Glu Ser Ala Phe Arg Gln Leu Arg Leu
 515 520 525

Arg Ala Gly Asp Lys Val Arg Val Thr Val Gly Asp Arg Arg Ala Val
 530 535 540

Leu Gln Val Ser Leu Ala Thr Gly Trp Gly Leu Gln Ala Val Val Ala
 545 550 555 560

Pro Glu Thr Leu Ala Arg Leu Thr Asp Ser Ala Ala Pro Arg Ala Val
 565 570 575

Trp Ile Arg Ala Ser Ala Asp Ala Asp Ser Thr Arg Leu Val Gly Glu
 580 585 590

Leu Gly Asp Leu Ala Ala Ala Ala Gly Ala Asn Val Asn Asp Gln Leu
 595 600 605

Glu Ala Arg Glu Thr Glu Asn Ala Pro Leu Met Ile Leu Thr Trp Ala
 610 615 620

Ile Val Ala Leu Leu Gly Phe Ser Val Ala Ile Ala Leu Val Gly Ile
 625 630 635 640

Ala Asn Thr Leu Gly Leu Ser Val Leu Glu Arg Val Arg Glu His Ala
 645 650 655

Leu Leu Arg Ala Leu Gly Leu Thr Arg Arg Gln Leu Arg Arg Met Leu
 660 665 670

Ala Ala Glu Ala Val Leu Leu Ser Leu Val Ala Ala Val Leu Gly Thr
 675 680 685

Val Ile Gly Ile Gly Phe Ala Trp Val Gly Tyr Glu Thr Phe Val Lys
 690 695 700

Gln Ala Leu Asp Asn Ala Thr Met Gln Val Pro Trp Pro Leu Leu Ala
 705 710 715 720

Val Val Val Leu Val Ala Ala Leu Ala Gly Leu Leu Ala Ser Val Leu
 725 730 735

Pro Ala Arg Arg Ala Val Arg Val Thr Pro Ala Ala Gly Leu Ser Phe
 740 745 750

Glu

<210> 20
 <211> 232
 <212> PRT
 <213> Nonomuria

<400> 20

Met Thr Gly Gln Arg Ala Ala Leu Glu Thr Val Ala Ala Ser Ala Arg
 1 5 10 15

Asn Leu Thr Lys Val Tyr Gly Gln Gly Glu Thr Arg Val His Ala Leu
 20 25 30

Arg Gly Val Asp Leu Asp Leu Pro Arg Gly Lys Phe Thr Ala Ile Met
 35 40 45

Gly Ser Ser Gly Ser Gly Lys Ser Thr Leu Met His Cys Leu Ala Gly
 50 55 60

Leu Asp Gln Ala Ser Asp Gly Thr Val Thr Val Ala Gly Thr Asp Leu
 65 70 75 80

Gly Ser Leu Asp Asp Asn Glu Leu Thr Val Phe Arg Arg Glu His Ile
 85 90 95

Gly Phe Val Phe Gln Ser Phe Asn Leu Leu Pro Met Leu Thr Ala Phe
 100 105 110

Gln Asn Ile Thr Leu Pro Leu Glu Leu Gly Gly Arg Arg Ile Asp Asp
 115 120 125

Ala Ala Thr Glu Arg Val His Val Leu Ala Glu Thr Leu Gly Met Ala
 130 135 140

Asp Arg Leu Gly His Arg Pro Ser Glu Met Ser Gly Gly Gln Gln Gln
 145 150 155 160

Arg Val Ala Ile Ala Arg Ala Leu Ile Thr Gly Pro Asp Leu Leu Phe
 165 170 175

Ala Asp Glu Pro Thr Gly Asn Leu Asp Ser Thr Thr Ser Ala Glu Val
 180 185 190

Leu Gly Tyr Leu His Lys Ser Thr Arg Glu Leu Gly Gln Thr Val Val
 195 200 205

Met Val Thr His Glu Arg Glu Ala Ala Ala Tyr Ala Asp Gly Val Val
 210 215 220

Thr Leu Glu Asp Gly Arg Ile Ala
 225 230

<210> 21
 <211> 535
 <212> PRT
 <213> Nonomuria

<400> 21

Met Ser His Ile Thr Met Thr Pro Pro Ser Ala Cys Arg Asp Pro Ala
 1 5 10 15

Pro Ala Gly Arg Phe Pro Arg Trp Ala Val Trp Arg Ser Pro Pro Gly
 20 25 30

Gln Pro Trp Trp Ala Arg Pro Ala Leu Leu Cys Ile Ala Ala Thr Ala
 35 40 45

Ala Val Leu Tyr Ala Trp Asn Leu Pro Leu Val Asp Tyr Ala Pro Arg
 50 55 60

Tyr Ser Asp Ala Val Lys Ser Met Ser Glu Asn Trp Lys Ala Phe Leu
 65 70 75 80

Tyr Gly Thr Val Asp Val Gln Ala Thr Tyr Thr Leu Asp Lys Leu Ala
 85 90 95

Gly Ala Phe Val Pro Gln Ala Ile Ser Val Lys Ile Phe Gly Phe His
 100 105 110

Ala Trp Ala Leu Ala Leu Pro Gln Val Ile Glu Gly Val Ile Ser Val
 115 120 125

Leu Val Met Tyr Arg Ile Val Arg Arg Trp Ala Gly Val Val Pro Gly
 130 135 140

Leu Leu Ala Ala Ala Val Phe Thr Ile Thr Pro Val Ala Ala Ser Met
 145 150 155 160

Phe Gly His Ser Met Ala Asp Gly Ala Leu Val Met Cys Leu Val Leu
 165 170 175

Ala Val Asp Ser Tyr Gln Arg Ala Val Leu Glu Gly Arg Leu Arg Ser
 180 185 190

Leu Val Trp Ala Gly Val Trp Val Gly Leu Gly Phe Gln Ala Lys Met
 195 200 205

Leu Gln Ala Trp Met Ile Leu Pro Ala Leu Ala Ile Gly Tyr Leu Leu
 210 215 220

Ser Ala Pro Ile Gly Leu Arg Arg Arg Leu Gln His Leu Gly Ile Ala
 225 230 235 240

Gly Val Val Thr Leu Val Val Ser Leu Ser Trp Ile Thr Leu Tyr His
 245 250 255

Val Thr Pro Ala Ala Asp Arg Pro Tyr Ile Ser Gly Thr Thr Asn Ser
 260 265 270

Ser Ala Ala Ala Met Val Phe Gly Tyr Asn Gly Leu Gly Arg Leu Gly
 275 280 285

Ile Asn Leu Pro Gly Ala Leu Pro Pro Asn Tyr Met Gly Ser Val Ile
 290 295 300

Gly Pro Ala Pro Pro Lys Arg Ser Thr Gln Leu Pro Arg Pro Arg Pro
 305 310 315 320

Gly Met Val Ile Pro Glu Ile Gly Ile Glu His Gly Gly Gly Trp Gly
 325 330 335

Lys Leu Phe Gly Gly Arg Leu Gly Val Ala Ser Gly Trp Leu Tyr Pro
 340 345 350

Leu Ala Leu Met Ala Leu Leu Cys Gly Leu Trp Trp Trp Arg Arg Ala

355

360

365

Glu Arg Thr Asp Pro Ala Arg Gly Gly Met Val Met Trp Gly Val Trp
 370 375 380

Leu Leu Thr Phe Ala Leu Pro Tyr Ser Ala Val Phe Val Ile Pro His
 385 390 395 400

Ser Ala Tyr Val Ala Val Leu Ala Pro Pro Val Ala Ala Leu Ser Gly
 405 410 415

Ile Gly Ile Val Met Phe Trp Arg Ala Tyr Arg Ser Gly Gly Arg Met
 420 425 430

Ala Trp Ile Phe Pro Leu Ala Ile Val Ala Glu Leu Ala Trp Ala Val
 435 440 445

Trp Leu Trp Ser Phe Tyr Pro Thr Phe Leu Pro Trp Ala Met Trp Gly
 450 455 460

Ala Val Ala Leu Gly Val Val Ala Val Val Ala Leu Ala Leu Ala Arg
 465 470 475 480

Leu Val Arg Pro Arg Arg Ser Ser Leu Val Ser Ala Gly Leu Thr Ile
 485 490 495

Gly Val Ala Ala Met Leu Ala Ala Pro Ala Thr Trp Ser Ala Ser Val
 500 505 510

Leu Asp Pro Arg Tyr Gly Gly Ser Ser Phe Asp Ala Asn Ala Gly Pro
 515 520 525

Ala Ala Arg Thr Pro Gly Gly
 530 535

<210> 22

<211> 270

<212> PRT

<213> Nonomuria

<400> 22

Met Leu Gln Asp Ala Asp Arg Thr Arg Ile Leu Ala Ile Ser Pro His
 1 5 10 15

Leu Asp Asp Ala Val Leu Ser Val Gly Ala Ser Leu Ala Gln Ala Glu
 20 25 30

Gln Asp Gly Gly Lys Val Thr Val Phe Thr Val Phe Ala Gly Ser Ala

35

40

45

Ala Pro Pro Tyr Ser Pro Ala Ala Glu Arg Phe His Ala Arg Trp Gly
 50 55 60

Leu Ser Pro Thr Glu Asp Ala Pro Leu Arg Arg Arg Asn Glu Asp Ile
 65 70 75 80

Ala Ala Leu Asp Gln Leu Gly Ala Gly His Arg His Gly Arg Phe Leu
 85 90 95

Asp Ala Ile Tyr Arg Arg Ser Pro Asp Gly Gln Trp Leu Leu His His
 100 105 110

Asn Glu Gly Ser Met Val Arg Gln Gln Ser Pro Ala Asn Asn His Asp
 115 120 125

Leu Val Ala Ala Ile Arg Glu Asp Ile Glu Ser Met Ile Ala Glu Cys
 130 135 140

Asp Pro Thr Leu Val Leu Thr Cys Val Ala Ile Gly Lys His Pro Asp
 145 150 155 160

His Lys Ala Thr Arg Asp Ala Thr Leu Leu Ala Ala Arg Glu Arg Gly
 165 170 175

Ile Pro Leu Arg Leu Trp Gln Asp Leu Pro Tyr Ala Ala Tyr Ser Gln
 180 185 190

Asp Leu Ala Glu Leu Pro Asp Gly Leu Arg Leu Gly Ser Pro Glu Leu
 195 200 205

Ser Phe Val Asp Glu Glu Ala Arg Thr Arg Lys Phe Gln Ala Met Lys
 210 215 220

His Tyr Ala Thr Gln Leu Ser Val Leu Asp Gly Pro Asn Lys Asn Leu
 225 230 235 240

Phe Ala Lys Leu Asp Glu His Ala Arg Asn Ala Ala Pro Asp Gly Gly

Tyr Asn Glu Thr Thr Trp Pro Val Ile Arg Tyr Ala Ala Glu
 260 265 270

<210> 23

<211> 420

<212> PRT

<213> Nonomuria

<400> 23

Met Ala His Arg Leu Arg Arg Leu Thr Thr Ala Phe Arg Ser Val Arg
 1 5 10 15

Leu Arg Leu Thr Leu Val Tyr Gly Ala Leu Phe Ala Ala Ser Gly Val
 20 25 30

Val Leu Leu Ala Ile Thr Tyr Leu Leu Phe Arg Gly Ser Arg Pro Phe
 35 40 45

Val Leu Val Asp Gly Asp Pro Gly Gly Arg Phe Arg Ala Phe Ala Arg
 50 55 60

Gln Gln Gln Ala Ala Ile Leu Glu Asn Leu Leu Phe Gln Ser Leu Ile
 65 70 75 80

Ala Leu Ala Leu Met Thr Val Ile Ser Phe Leu Leu Gly Trp Leu Val
 85 90 95

Ala Gly Arg Met Leu Arg Pro Leu Arg Thr Met Asn Thr Thr Leu Lys
 100 105 110

Arg Ile Ser Ala Arg Asn Val His Glu Arg Leu Ala Leu Pro Gly Pro
 115 120 125

Arg Asp Glu Leu Arg Asn Leu Ala Asp Thr Val Asp Glu Leu Leu Glu
 130 135 140

Arg Leu His Ser Ala Leu Asp Ala Gln Lys Arg Phe Val Ala Asn Ala
 145 150 155 160

Ala His Glu Leu Arg Thr Pro Leu Thr Leu Glu His Ala Leu Leu Glu
 165 170 175

Glu Ser Leu Leu His Arg Asp Ala Asp Thr Pro Ser Met Arg Ser Ile
 180 185 190

Met Glu Arg Leu Leu Asp Leu Ser Arg Gln Gln Gly Arg Leu Leu Glu
 195 200 205

Ser Leu Leu Thr Leu Ala Lys Ser Glu Gly Gly Leu Asp His Arg Glu
 210 215 220

Pro Leu Asp Leu Ala Glu Ile Ala Glu His Thr Ile Arg Thr Met Glu
 225 230 235 240

Gly Thr Gly Pro Gly Ala Asp Gly Asn Asn Pro Arg Ala Gly Val Ser

245

250

255

Ala Asp Arg Arg Ala Asp Gly Asn Ser Pro Thr Ala Gly Ala Ala Thr
 260 265 270

Asp Ser Trp Ala Asp Gly Lys Ser Leu Arg Ala Gly Cys Pro His Pro
 275 280 285

Arg Leu Val Thr Gly Ile Ala His Ala Pro Thr Thr Gly Asp Pro Ala
 290 295 300

Leu Val Glu Arg Leu Ile Thr Asn Leu Leu Asp Asn Ala Met Arg Tyr
 305 310 315 320

Asn Val Pro Gly Gly Gln Val Glu Leu Ser Thr Arg Ala Glu Ala Gly
 325 330 335

Lys Ala Val Val Ser Ile Ala Asn Thr Gly Pro Val Val Pro Pro Glu
 340 345 350

Gln Val His Arg Leu Phe Glu Pro Phe Gln Arg Leu Asp Arg Thr Arg
 355 360 365

Ala Asp Asp His His Gly Leu Gly Leu Ser Ile Val Arg Ala Ile Ala
 370 375 380

Val Ala His Asp Ala Thr Leu Thr Ala His Ala Arg Pro Gln Gly Gly
 385 390 395 400

Leu Ser Val Glu Ile His Phe Pro Leu Met Arg Arg Ala Leu Arg Arg
 405 410 415

Leu Ala Pro Ser
 420

<210> 24
 <211> 709
 <212> PRT
 <213> Nonomuria

<400> 24

Met Ser Leu Pro Thr Cys Ala Cys Gly Leu Thr Pro His Ala Pro Ser
 1 5 10 15

Cys Ala Pro Arg Ser Glu His Ala Gly Gly Arg Ser Ser Glu Ser Arg
 20 25 30

Thr Asp Ile Gln Gly Leu Arg Ala Ile Ala Val Ala Val Val Ala

35

40

45

Phe His Leu Trp Pro Gly Gly Pro Thr Gly Gly Tyr Val Gly Val Asp
 50 55 60

Val Phe Phe Val Ile Ser Gly Tyr Leu Ile Thr Ser His Leu Leu Arg
 65 70 75 80

Gln Pro Gly His Gly Gly Gly Arg Leu Leu Asp Phe Trp Ala Arg Arg
 85 90 95

Val Arg Arg Leu Ile Pro Ala Ala Ser Leu Ala Leu Leu Val Thr Leu
 100 105 110

115

120

125

Arg Glu Val Ile Ala Ala Thr Val Tyr Val Glu Asn Leu Arg Leu Ala
 130 135 140

Leu Thr Gln Ala Asn Tyr Leu Asp Val Asp Gln Pro Asp Trp Pro Ala
 145 150 155 160

Gln His Tyr Trp Ser Leu Ser Ile Glu Glu Gln Phe Tyr Leu Gly Trp
 165 170 175

Pro Leu Leu Leu Gly Ser Ala Ala Trp Leu Ala Ala Arg Val Ala Arg
 180 185 190

Gly Arg Arg Pro Pro Glu Asn Phe Thr Arg Trp Ser Ala Val Val Val
 195 200 205

Thr Gly Ala Val Val Ala Ala Ser Leu Ala Trp Ser Val Gln Lys Thr
 210 215 220

Ala Thr Asp Pro Ala Ala Ala Tyr Phe Val Ser Thr Thr Arg Phe Trp
 225 230 235 240

Glu Leu Ala Leu Gly Gly Leu Leu Ala Ala Val Leu Thr Val Arg Ala
 245 250 255

Met Pro Arg Ala Arg Ala Val Arg Ala Gly Leu Ala Trp Ala Gly Leu
 260 265 270

Gly Met Ile Gly Trp Ala Val Val Arg Phe Asp Ala Glu Thr Ala Phe
 275 280 285

Pro Gly Ala Ala Ala Leu Val Pro Thr Val Gly Ala Cys Leu Val Ile

290

295

300

Ala Ala Ala Ala Asp Gly Leu Arg Gly Gly Pro Gly Arg Ala Leu Ala
 305 310 315 320

Trp Arg Pro Val Gln Trp Leu Gly Asn Ala Ser Tyr Ala Val Tyr Leu
 325 330 335

Trp His Trp Pro Pro Ile Met Ile Leu Pro Tyr Ala Leu Gly Arg Ser
 340 345 350

Leu Thr Val Ile Glu Ser Val Gly Val Ile Ala Leu Thr Leu Val Leu
 355 360 365

Ala Ala Leu Ser Gln Tyr Leu Val Glu Asp Arg Leu Arg Trp His Pro
 370 375 380

Val Leu Val Arg Ser Arg Arg Leu Thr Phe Ala Met Leu Ala Ser Cys
 385 390 395 400

Val Val Val Val Ala Gly Ala Gly Ala Gly Val Val Ala Tyr Ala Asp
 405 410 415

Ala Ala Glu Arg Thr Glu Ser Ala Ala Phe Glu Ala Ala Ala Ser Arg
 420 425 430

Ala Gly Ser Cys Leu Gly Ala Gly Val Val Arg Asp Pro Ala Cys Gln
 435 440 445

Asp Leu Gly Leu Leu Met Pro Pro Gln Val Ala Leu Lys Asp Lys Pro
 450 455 460

Ala Val Tyr Ala Asp Gly Cys Val Asn Lys Glu Pro Phe Ile Ala Arg
 465 470 475 480

Asn Thr Cys Thr Tyr Gly Pro Asp Ala Ala Gly Arg Arg Ile Ala Leu
 485 490 495

Val Gly Asn Ser His Ala Gly His Trp Val Pro Ala Leu Glu Lys Ala
 500 505 510

Leu Trp Ser Glu Arg Trp Gln Leu Thr Thr Tyr Val Gln Leu Ala Cys
 515 520 525

Tyr Thr Val Asp Gln Pro Leu Val Leu Glu Gly Ala Gly Val Ser Glu
 530 535 540

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Asn Cys Gln Lys Ile Asn Lys Trp Ala Val Gly Ser Ile Val Asn Gly
 545 550 555 560

Gly Tyr Asp Leu Val Ile Met Ser Asn Arg Thr His Val Pro Leu Ala
 565 570 575

Gly Val Ser Pro Ala Gly Gln Gln Ala Ala Ala Glu Arg Ala Tyr Arg
 580 585 590

Asp Thr Leu Arg Ala Phe Thr Gly Ala Gly Leu Pro Val Leu Val Leu
 595 600 605

Arg Asp Thr Pro Ala Met Pro Asp Ser Val Pro His Cys Ile Ala Lys
 610 615 620

625 630 635 640

Arg Pro Asp Pro Leu Ala Ala Ala Arg Ala Asp Asp Thr Gly Leu
 645 650 655

Val Ser Val Ala Ser Val Asp His Leu Val Cys Gly Glu Arg Cys Gly
 660 665 670

Pro Val Ile Gly Gly Leu Ile Ala Tyr Ser Asp Arg Ser His Leu Thr
 675 680 685

Thr Thr Phe Ala Arg Thr Leu Ala Pro Glu Val Thr Ala Ala Val Arg
 690 695 700

Gly Ala Leu Thr Arg
 705

<210> 25
 <211> 648
 <212> PRT
 <213> Nonomuria

<400> 25

Met Ala Ile Val Ser Pro Phe Gly Gly Leu Leu Lys Gly Asp Gly Glu
 1 5 10 15

Asp Asp Pro Ala Pro Ser Arg Ile Arg Pro Gly Thr Leu Arg Arg Val
 20 25 30

Leu Gly Tyr Phe Arg Pro His Val Gly Lys Val Ala Leu Phe Val Leu
 35 40 45

Val Thr Ala Leu Asp Ser Ile Phe Val Val Ala Ser Pro Leu Met Leu

50

55

60

Lys Asp Leu Val Asp Lys Gly Val Leu Gly Asn Asp Leu Glu Leu Val
 65 70 75 80

Ile Leu Leu Ala Cys Leu Ala Ala Gly Phe Ala Val Met Ser Thr Leu
 85 90 95

Leu Gln Leu Val Ser Ala Tyr Ile Ser Gly Arg Ile Gly Gln Gly Val
 100 105 110

Ser Tyr Asp Leu Arg Val Gln Ala Leu Asp His Val Gln Arg Leu Pro
 115 120 125

Ile Ala Phe Phe Thr Arg Thr Gln Thr Gly Val Leu Val Gly Arg Leu
 130 135 140

His Thr Glu Leu Val Met Thr Gln Met Ala Phe Thr Gln Met Leu Thr
 145 150 155 160

Ala Ala Ala Ser Ala Val Thr Val Leu Leu Val Leu Ala Glu Leu Phe
 165 170 175

Tyr Leu Ser Trp Ile Val Ala Leu Leu Thr Leu Val Leu Ile Pro Val
 180 185 190

Phe Leu Val Pro Trp Ser Tyr Val Gly Arg Arg Met Gln Arg Tyr Thr
 195 200 205

Arg Gly Leu Met Glu Glu Asn Ala Gly Leu Ala Gly Leu Leu Gln Glu
 210 215 220

Arg Phe Asn Val Gln Gly Ala Met Leu Ser Lys Leu Phe Gly Arg Pro
 225 230 235 240

Ala Glu Glu Met Ala Glu Tyr Glu Ser Arg Ala Gly Arg Ile Arg Gly
 245 250 255

Leu Ala Val Ser Val Thr Leu Tyr Gly Arg Met Ala Pro Ala Ile Phe
 260 265 270

Ala Leu Met Ala Ala Leu Ala Thr Ala Leu Val Tyr Gly Val Gly Gly
 275 280 285

Gly Leu Val Leu Ser Gln Ala Phe Gln Leu Gly Thr Leu Val Ala Leu
 290 295 300

Ala Thr Leu Leu Gly Arg Leu Phe Gly Pro Ile Thr Gln Leu Ala Ser
305 310 315 320

Ile Gln Glu Asn Ala Leu Thr Val Leu Val Ser Phe Glu Arg Ile Phe
325 330 335

Glu Leu Leu Asp Leu Lys Pro Leu Ile Glu Glu Arg Pro Asp Ala Val
340 345 350

Ala Leu Lys Ala Gly Lys Ala Ser Asp Val Gln Phe Glu Asn Val Ser
355 360 365

Phe Arg Tyr Pro Ser Ala Asp Glu Val Ser Leu Pro Ser Leu Glu Gln
370 375 380

Asn Val Arg Thr Gly Gln Glu Arg Gly Glu Ala Thr Pro Glu Val Leu
385 390 395 400

Arg Asp Val Ser Leu His Val Pro Ala Gly Thr Leu Thr Ala Leu Val
405 410 415

Gly Pro Ser Gly Ala Gly Lys Ser Thr Leu Thr His Leu Val Ser Arg
420 425 430

Leu Tyr Asp Pro Thr Ser Gly Thr Val Arg Val Gly Gly His Asp Leu
435 440 445

Arg Asp Leu Thr Phe Asp Ser Leu Arg Glu Thr Val Gly Val Val Ser
450 455 460

Gln Asp Thr Tyr Leu Phe His Asp Thr Ile Arg Ala Asn Leu Leu Tyr
465 470 475 480

Ala Arg Pro Asp Ala Thr Glu Asp Glu Leu Val Glu Ala Cys Arg Gly
485 490 495

Ala Gln Ile Trp Asp Leu Ile Ala Ser Leu Pro Arg Gly Leu Asp Thr
500 505 510

Val Val Gly Asp Arg Gly Tyr Arg Leu Ser Gly Gly Glu Lys Gln Arg
515 520 525

Leu Ala Ile Ala Arg Leu Leu Leu Lys Ala Pro Ser Val Val Val Leu
530 535 540

Asp Glu Ala Thr Ala His Leu Asp Ser Glu Ser Glu Ala Ala Val Gln
545 550 555 560

Arg Ala Leu Thr Thr Ala Leu Arg Ser Arg Thr Ser Leu Val Ile Ala
 565 570 575

His Arg Leu Ser Thr Ile Arg Glu Ala Asp His Ile Leu Val Ile Asp
 580 585 590

Asp Gly Arg Val Arg Glu Arg Gly Thr His Glu Glu Leu Leu Ala Glu
 595 600 605

Gly Gly Leu Tyr Ala Asp Leu Tyr His Thr Gln Phe Ala Lys Ser Gly
 610 615 620

Val Asn Gly Thr Arg Pro Gly Gln Gly Asp Gly Ala Glu Pro Val Gln
 625 630 635 640

Glu Val Val Gly Gly Gly Glu Arg
 645

<210> 26
 <211> 2097
 <212> PRT
 <213> Nonomuria

<400> 26

Met Ser Ala Gly Thr Arg Ala Thr Pro Thr Thr Val Leu Asp Leu Phe
 1 5 10 15

Ala Arg Gln Val Gly Arg Ala Pro Asp Ala Val Ala Leu Val Asp Gly
 20 25 30

Asp Arg Val Leu Thr Tyr Arg Arg Leu Asp Glu Leu Ala Gly Ala Leu
 35 40 45

Ser Gly Arg Leu Ile Gly Arg Gly Val Gly Arg Gly Asp Arg Val Ala
 50 55 60

Val Met Met Asp Arg Ser Ala Asp Leu Val Val Thr Leu Leu Ala Val
 65 70 75 80

Trp Gln Ala Gly Ala Ala Tyr Val Pro Val Asp Ala Ala Leu Pro Ala
 85 90 95

Arg Arg Val Ala Phe Met Val Ala Asp Ser Gly Ala Cys Leu Met Val
 100 105 110

Cys Ser Glu Ala Thr Arg Asp Ala Val Pro Gln Gly Val Glu Ser Ile
 115 120 125

Ala Leu Thr Gly Glu Gly Gly Cys Gly Thr Ser Ala Val Thr Val Asp
 130 135 140

Pro Gly Asp Leu Ala Tyr Val Met Tyr Thr Ser Gly Ser Thr Gly Thr
 145 150 155 160

Pro Lys Gly Val Ala Val Pro His Arg Ser Val Ala Glu Leu Thr Gly
 165 170 175

Asn Pro Gly Trp Gly Val Glu Pro Gly Glu Ala Val Leu Met His Ala
 180 185 190

Pro Tyr Thr Phe Asp Ala Ser Leu Phe Glu Ile Trp Val Pro Leu Val
 195 200 205

Ser Gly Ala Arg Val Val Ile Ala Ala Pro Gly Ala Val Asp Ala Arg
 210 215 220

Arg Leu Arg Glu Ala Val Ala Ala Gly Val Thr Arg Val His Leu Thr
 225 230 235 240

Ala Gly Ser Phe Arg Ala Val Ala Glu Glu Ser Pro Glu Ser Phe Ala
 245 250 255

His Phe Arg Glu Val Leu Thr Gly Gly Asp Val Val Pro Ala Tyr Ala
 260 265 270

Val Gln Lys Val Arg Ala Ala Cys Pro His Val Arg Ile Arg His Leu
 275 280 285

Tyr Gly Pro Thr Glu Thr Thr Leu Cys Ala Thr Trp Gln Leu Leu Glu
 290 295 300

Pro Gly Asp Val Val Gly Pro Val Leu Pro Ile Gly Arg Pro Leu Pro
 305 310 315 320

Gly Arg Arg Ala Trp Val Leu Asp Ala Ser Leu Arg Pro Val Glu Pro
 325 330 335

Gly Val Val Gly Asp Leu Tyr Leu Ser Gly Ala Gly Leu Ala Asp Gly
 340 345 350

Tyr Leu Asp Arg Ala Gly Leu Thr Ala Glu Arg Phe Val Ala Asp Pro
 355 360 365

Ser Ala Ala Gly Arg Arg Met Tyr Arg Thr Gly Asp Leu Ala Gln Trp
 370 375 380

Thr Ala Asp Gly Glu Leu Leu Phe Ala Gly Arg Ala Asp Asp Gln Val
385 390 395 400

Lys Val Arg Gly Phe Arg Ile Glu Pro Gly Glu Val Glu Ala Ala Leu
405 410 415

Thr Ala Gln Pro His Val Arg Glu Ala Val Val Val Ala Ile Asp Gly
420 425 430

Arg Leu Ile Gly Tyr Val Val Ala Asp Gly Asp Val Asp Pro Val Leu
435 440 445

Met Arg Arg Arg Leu Ala Ala Ser Leu Pro Glu Tyr Met Ile Pro Ala
450 455 460

Ala Leu Val Thr Leu Asp Ala Leu Pro Leu Thr Gly Ser Gly Lys Val
465 470 475 480

Asp Arg Arg Ala Leu Pro Glu Pro Asp Phe Ala Ser Ala Ala Pro Arg
485 490 495

Arg Glu Pro Gly Thr Glu Pro Glu Arg Val Leu Cys Asp Leu Phe Ala
500 505 510

Glu Leu Leu Gln Pro Glu Gly Arg Gly Val Gly Val Asp Asp Gly Phe
515 520 525

Val Glu Leu Gly Gly Asp Ser Ile Val Ala Ile Arg Leu Ala Ala Arg
530 535 540

Ala Ser Arg Val Gly Leu Leu Val Thr Pro Ala Gln Ile Phe Lys Glu
545 550 555 560

Lys Thr Pro Ala Arg Leu Ala Ala Val Ala Gly Ala Val Pro Ala Gly
565 570 575

Arg Pro Ala Asp Gly Pro Leu Ile Thr Leu Thr Ala Glu Glu Glu Ala
580 585 590

Glu Leu Ala Thr Ala Val Pro Gly Ala Glu Glu Val Trp Pro Leu Ala
595 600 605

Pro Leu Gln Glu Gly Leu Tyr Phe Gln Ala Thr Leu Asp Asp Glu Gly
610 615 620

His Asp Ile Tyr Gln Ala Gln Trp Ile Leu Glu Leu Ala Gly Pro Leu

625	630	635	640
Asp Ala Ala Arg Leu Arg Ala Ser Trp Glu Ala Val Phe Ala Arg His	645	650	655
Pro Glu Leu Arg Val Ser Phe His Arg Arg Ala Ser Gly Thr Met Leu	660	665	670
Gln Val Val Ala Gly His Val Val Leu Pro Trp Arg Glu Val Asp Leu	675	680	685
Ala Asp Ala Gly Asp Ile Asp Ala Ala Val Ala Ala Leu Ile Ser Glu	690	695	700
Glu Gln Glu Gln Arg Phe Asp Leu Ala Lys Ala Pro Leu Phe Arg Leu	705	710	715
Val Leu Val Arg His Gly Glu Asp Arg His Arg Leu Leu Val Val His	725	730	735
His His Ile Leu Thr Asp Gly Trp Ser Val Ala Val Ile Leu Asn Glu	740	745	750
Val Ala Glu Ala Tyr Thr Asn Gly Gly Arg Leu Pro Asp Arg Thr Gly	755	760	765
Ala Ala Ser Tyr Arg Asp Tyr Leu Ala Trp Leu Asp Arg Gln Asp Lys	770	775	780
Asp Ala Ala Arg Ala Ala Trp Gln Ala Glu Leu Ser Gly Leu Glu Gly	785	790	795
Pro Ala Pro Ile Ala Lys Ala Ala Thr Thr Thr Gly Ala Gly Thr Gly	805	810	815
Tyr Glu Tyr Arg Ile Ala Phe Leu Thr Pro Asp Leu His Thr Arg Leu	820	825	830
Thr Glu Leu Ala Arg Asp His Gly Leu Thr Leu Asn Thr Leu Ala Gln	835	840	845
Gly Ala Trp Ala Met Val Leu Ala Arg Leu Ala Arg Arg Thr Asp Val	850	855	860
Val Phe Gly Thr Thr Val Ala Cys Arg Pro Ala Glu Leu Pro Glu Val	865	870	875
			880

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Glu Ser Val Pro Gly Leu Met Met Asn Thr Val Pro Val Arg Val Pro
 885 890 895

Leu Gln Gly Ala Gln Ser Val Val Asp Leu Leu Thr Gly Leu Gln Glu
 900 905 910

Arg Gln Ala Ala Leu Leu Pro His Gln His Leu Gly Leu Thr Glu Ile
 915 920 925

Gln Arg Ala Ala Gly Pro Gly Ala Thr Phe Asp Thr Leu Leu Val Phe
 930 935 940

Glu Asn Tyr Pro Arg Asp Phe Ala Gly Gln Phe Thr Tyr Leu Gly Thr
 945 950 955 960

Ile Glu Gly Thr His Tyr Pro Leu Thr Leu Gly Ile Ile Pro Gly Asp
 965 970 975

His Phe Arg Ile Gln Leu Val Tyr Arg Arg Gly Gln Val Gly Glu Ser
 980 985 990

Val Ala Glu Ser Ile Leu Gly Trp Phe Thr Gly Ala Leu Met Thr Met
 995 1000 1005

Ala Ala Asp Pro His Gly Pro Val Gly Arg Ile Gly Val Gly Glu
 1010 1015 1020

Ala Arg Ala Gly Gly Ser Asp Arg Ala Met Ala Ala Gly Glu Pro
 1025 1030 1035

Leu Pro Val Leu Leu Arg Arg Val Val Lys Asp Arg Pro Asp Glu
 1040 1045 1050

1055 1060 1065

Trp Glu Arg Ala Thr Ala Leu Ala Ala Glu Leu Arg Ala His Gly
 1070 1075 1080

Ile Gly Pro Glu Ser Arg Val Ala Val Met Val Gly Arg Ser Ala
 1085 1090 1095

Trp Trp Ala Val Gly Val Leu Gly Val Cys Leu Ala Gly Gly Ala
 1100 1105 1110

Phe Met Pro Val Asp Pro Ala Tyr Pro Ala Glu Arg Val Arg Trp
 1115 1120 1125

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Ile	Leu	Ala	Asp	Ser	Asp	Pro	Arg	Leu	Val	Leu	Cys	Ala	Gly	Thr
1130						1135					1140			
Thr	Arg	Glu	Ala	Val	Pro	Glu	Glu	Phe	Ala	Asp	Arg	Leu	Val	Val
1145						1150					1155			
Val	Asp	Glu	Leu	Asp	Leu	Ala	Gly	Ser	Asp	Asp	Ala	Gly	Leu	Pro
1160						1165					1170			
Arg	Val	Ser	Pro	Asp	Asp	Ala	Ala	Tyr	Val	Ile	Tyr	Thr	Ser	Gly
1175						1180					1185			
Ser	Thr	Gly	Thr	Pro	Lys	Gly	Val	Val	Val	Ser	His	Ala	Gly	Leu
1190						1195					1200			
Gly	Asn	Leu	Ala	Met	Ala	Gln	Ile	Asp	Arg	Phe	Ala	Val	Ser	Pro
1205						1210					1215			
Ser	Ser	Arg	Val	Leu	Gln	Phe	Ala	Ala	Leu	Gly	Phe	Asp	Ala	Met
1220						1225					1230			
Val	Ser	Glu	Met	Leu	Met	Ala	Leu	Leu	Ser	Gly	Ala	Arg	Leu	Val
1235						1240					1245			
Met	Ala	Pro	Glu	Pro	Ala	Leu	Pro	Pro	Arg	Val	Ser	Leu	Ala	Glu
1250						1255					1260			
Ala	Leu	Arg	Arg	Trp	Glu	Val	Thr	His	Val	Thr	Val	Pro	Pro	Ser
1265						1270					1275			
Val	Leu	Ala	Thr	Ala	Asp	Ala	Leu	Pro	Ala	Gly	Leu	Glu	Thr	Val
1280						1285					1290			
Val	Val	Ala	Gly	Glu	Ala	Cys	Pro	Pro	Gly	Leu	Ala	Glu	Arg	Trp
1295						1300					1305			
Ser	Ala	Gly	Arg	Arg	Leu	Val	Asn	Ala	Tyr	Gly	Pro	Thr	Glu	Ala
1310						1315					1320			
Thr	Val	Cys	Ala	Ala	Met	Ser	Arg	Pro	Leu	Thr	Gly	Ser	Arg	Glu
1325						1330					1335			
Val	Val	Pro	Ile	Gly	Thr	Pro	Ile	Ala	Gly	Gly	Arg	Cys	Tyr	Val
1340						1345					1350			
Leu	Asp	Ala	Phe	Leu	Arg	Pro	Leu	Pro	Pro	Gly	Ile	Thr	Gly	Glu
1355						1360					1365			

Leu Tyr Val Ala Gly Ile Gly 1370	Leu Ala Arg Gly Tyr 1380	Leu Gly Arg 1375
Ala Ser Leu Thr Ala Glu Arg 1385	Phe Val Ala Asp Pro 1395	Phe Val Ala 1390
Gly Glu Arg Met Tyr Arg Thr 1400	Gly Asp Leu Ala Tyr 1410	Trp Thr Gly 1405
Glu Gly Glu Leu Val Phe Ala 1415	Gly Arg Asp Asp Asp 1425	Gln Val Lys 1420
Ile Arg Gly Tyr Arg Val Glu 1430	Pro Gly Glu Val Glu 1440	Ala Val Leu 1435
Ala Gly Gln Pro Gly Val Asp 1445	Gln Ala Val Val Val 1455	Ala Arg Glu 1450
Gly Arg Leu Leu Gly Tyr Val 1460	Val Ser Gly Gly Gly 1470	Val Asp Pro 1465
Val Arg Leu Arg Glu Gly Val 1475	Ala Arg Val Leu Pro 1485	Glu Tyr Met 1480
Val Pro Ala Ala Val Val Val 1490	Leu Gly Ala Val Pro 1500	Val Thr Ala 1495
Asn Gly Lys Val Asp Arg Glu 1505	Ala Leu Pro Asp Pro 1515	Gly Phe Gly 1510
Gly Arg Val Ser Gly Arg Glu 1520	Pro Arg Thr Glu Val 1530	Glu Arg Ala 1525
Leu Cys Gly Leu Phe Ala Glu 1535	Val Leu Gly Leu Pro 1545	Gly Val Thr 1540
Ala Val Gly Pro Asp Asp Ser 1550	Phe Phe Glu Leu Gly 1560	Gly Asp Ser 1555
Ile Thr Ser Met Gln Leu Ala 1565	Ser Arg Ala Arg Arg 1575	Glu Gly Met 1570
Leu Phe Gly Ala Arg Glu Val 1580	Phe Glu Arg Lys Thr 1590	Pro Ala Gly 1585
Leu Ala Ala Ile Val Asp Val 1595	Gly Gly Glu Leu Ala 1605	Ala Gly Pro 1600

Ala Asp	Gly Val	Gly Glu	Ile	Ala Trp	Thr Pro	Ile	Met Arg	Ala	
1610			1615			1620			
Leu Gly	Asp Gly	Ile Val	Gly	Ser Arg	Phe Ala	Gln	Trp Val	Val	
1625			1630			1635			
Leu Gly	Ala Pro	Pro Asp	Leu	Arg Ala	Asp Val	Val	Ala Ala	Gly	
1640			1645			1650			
Leu Ala	Ala Val	Val Asp	Thr	His Asp	Val Leu	Arg	Leu Arg	Val	
1655			1660			1665			
Val Asp	Asp Arg	Ala Gly	Arg	Arg Leu	Ala Val	Gly	Glu Arg	Gly	
1670			1675			1680			
Ser Val	Asp Thr	Ala Gly	Leu	Val Thr	Arg Leu	Glu	Cys Gly	Gly	
1685			1690			1695			
Arg Pro	Pro Asp	Glu Val	Val	Glu Arg	Ala Val	Arg	Glu Ala	Val	
1700			1705			1710			
Gly Arg	Leu Asp	Pro Val	Ala	Gly Val	Met Ala	Gln	Ala Val	Trp	
1715			1720			1725			
Val Asp	Ala Gly	Pro Ala	Arg	Thr Gly	Arg Leu	Val	Val Val	Val	
1730			1735			1740			
His His	Leu Ala	Val Asp	Gly	Met Ser	Trp Arg	Ile	Leu Val	Pro	
1745			1750			1755			
Asp Leu	Arg Leu	Ala Cys	Glu	Ala Val	Ala Glu	Gly	Arg Asp	Pro	
1760			1765			1770			
Val Leu	Glu Pro	Val Trp	Gly	Ser Phe	Arg Arg	Trp	Ala Ala	Leu	
1775			1780			1785			
Leu Glu	Glu Ser	Ala Leu	Ser	Arg Glu	Arg Val	Gly	Glu Leu	His	
1790			1795			1800			
Thr Trp	Arg Thr	Ile Val	Asp	Gln Glu	Asp Arg	Pro	Val Gly	Arg	
1805			1810			1815			
Arg Arg	Leu Ser	Ala Gly	Asp	Ala Ala	Gly Gly	Val	Arg Ser	Arg	
1820			1825			1830			
Ser Trp	Val Met	Ser Gly	Asp	Glu Ala	Ser Leu	Leu	Val Gly	Lys	

1835	1840	1845
Val Pro Val Ala Phe His Cys Gly Val His Glu Val Leu Leu Ala		
1850	1855	1860
Gly Leu Ala Gly Ala Val Ala Arg Trp His Gly Asp Asp Gly Val		
1865	1870	1875
Leu Val Asp Val Glu Gly His Gly Arg His Pro Ala Glu Gly Met		
1880	1885	1890
Asp Leu Ser Arg Thr Val Gly Trp Phe Thr Ser Met His Pro Val		
1895	1900	1905
Arg Leu Asp Val Ala Gly Ile Glu Leu Ala Ala Val Pro Ala Gly		
1910	1915	1920
Gly Arg Ala Ala Gly Gln Leu Leu Lys Ala Val Lys Glu Gln Ser		
1925	1930	1935
Arg Ala Ala Pro Gly Asp Gly Leu Gly Tyr Gly Leu Leu Arg His		
1940	1945	1950
Leu Asn Pro Glu Thr Gly Pro Val Leu Ala Ala Leu Pro Ser Pro		
1955	1960	1965
Gln Ile Gly Phe Asn Tyr Met Gly Arg Phe Val Thr Val Asp Gln		
1970	1975	1980
Gly Gly Ala Arg Pro Trp Gln Pro Val Gly Gly Ile Gly Gly Ser		
1985	1990	1995
Leu Asp Pro Gly Met Gly Leu Pro His Ala Leu Glu Val Asn Ala		
2000	2005	2010
Ile Val His Asp Arg Leu Ala Gly Pro Glu Leu Val Leu Thr Val		
2015	2020	2025
Asp Trp Arg Asp Asp Leu Leu Glu Glu Thr Asp Ile Glu Arg Leu		
2030	2035	2040
Cys Gln Val Trp Leu Asp Met Leu Ser Gly Leu Ser Arg Gln Ala		
2045	2050	2055
Glu Asp Pro Ser Ala Gly Gly His Thr Ala Ser Asp Phe Ala Leu		
2060	2065	2070

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Leu Asp Leu Asp Gln Asp Glu Ile Glu Gly Phe Glu Ala Ile Ala
 2075 2080 2085

Ala Glu Leu Ser Gly Gly Gln Thr Ser
 2090 2095

<210> 27
 <211> 1063
 <212> PRT
 <213> Nonomuria

<400> 27

Met Asn Thr Pro Ser Thr Pro Ala Gly Ser Ala Leu Glu Glu Val Trp
 1 5 10 15

Pro Leu Ser Pro Met Gln Glu Gly Ile Leu Tyr His Ala Ala Leu Asp
 20 25 30

Glu Ala Pro Asp Leu Tyr Leu Ile Gln Gln Ser Gln Ile Ile Glu Gly
 35 40 45

Pro Leu Asp Thr Glu Arg Phe Arg Leu Ala Trp Glu Ser Leu Leu Asn
 50 55 60

Arg His Ala Ala Leu Arg Ala Cys Phe His Arg Arg Lys Ser Gly Glu
 65 70 75 80

Ser Val Gln Leu Ile Pro Arg Lys Val Pro Leu Pro Trp Ser Glu Arg
 85 90 95

Asp Leu Ser Gly Leu Ser Glu Glu Asp Ala Leu Ala Glu Ala Ser Val
 100 105 110

Ile Ala Glu Lys Glu Arg Ala Thr Arg Phe Asp Pro Ala Lys Pro Pro
 115 120 125

Leu Leu Arg Gln Val Leu Ile Arg Phe Gly Pro Asp Lys His Cys Leu
 130 135 140

Val Thr Thr Ser His His Leu Val Met Asp Gly Trp Ser Arg Ala Ile
 145 150 155 160

Leu Glu Ser Glu Leu Leu Glu Leu Tyr Ala Ala Gly Gly Ala Glu Pro
 165 170 175

Gly Leu Arg Pro Ala Gly Ser Tyr Arg Asp Tyr Leu Ala Trp Leu Glu
 180 185 190

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Arg Gln Asp Lys Glu Ala Ala Arg Ala Ala Trp Arg Ala Glu Leu Ala
 195 200 205

Gly Ala Asp Arg Ser Thr Leu Gly Ile Pro Glu Ala Ser Arg Lys Thr
 210 215 220

Gln Gly Gln Arg Val Arg Glu Val Leu Gly Tyr Ala Pro Asp Phe Thr
 225 230 235 240

Ser Ala Leu Val Asp Phe Ala Arg Arg His Gly Leu Thr Leu Asn Thr
 245 250 255

Leu Val Gln Gly Ala Trp Ala Leu Val Leu Ala Arg Leu Thr Arg Arg
 260 265 270

Arg Asp Val Val Phe Gly Ala Val Val Ser Gly Arg Pro Ala Glu Val
 275 280 285

Pro Gly Val Glu Gln Ala Val Gly Leu Phe Ile Asn Thr Val Pro Val
 290 295 300

Arg Val Arg Leu Asp Gly Gly Gln Pro Val Ile Gln Leu Leu Thr Glu
 305 310 315 320

Leu Gln Glu Arg Gln Ser Thr Leu Ile Ser His Gln His Leu Gly Leu
 325 330 335

Gln Glu Ile Gln Lys Leu Ser Gly Val Ser Phe Asp Thr Val Val Ser
 340 345 350

Phe Glu Asn Tyr Val Asp Pro Gly Ala Gly Pro Gly Ser Asp Arg Glu
 355 360 365

Leu Arg Leu Arg Leu Lys Glu Phe His Gln Ser Ala Pro Tyr Ala Leu
 370 375 380

Leu Leu Gly Ile Met Pro Gly Glu Ser Leu Gln Thr Asp Val Glu Tyr
 385 390 395 400

Arg Pro Glu Leu Leu Asp Ala Arg Val Ala Lys Glu Ala Leu His Gly
 405 410 415

Leu Ala Arg Val Leu Glu Arg Met Ile Ala Glu Pro Glu Thr Ala Val
 420 425 430

Gly Arg Leu Asp Val Val Gly Asp Ala Gly Arg Glu Leu Val Val Glu
 435 440 445

Arg Trp Asn Glu Thr Gly Asp Ala Ile Gly Ala Pro Ser Ala Val Asp
 450 455 460

Leu Phe Arg Arg Gln Val Ala Arg Ala Pro Ala Ala Thr Ala Val Thr
 465 470 475 480

Ala Gly Asp Leu Ala Trp Ser Tyr Ala Glu Leu Asp Glu Arg Ser Gly
 485 490 495

Arg Leu Ala Arg Ala Leu Thr Glu Arg Gly Val Arg Arg Gly Asp Arg
 500 505 510

Val Gly Val Val Leu Gly Arg Ser Ala Glu Val Leu Ala Ala Trp Leu
 515 520 525

Gly Val Trp Lys Ala Gly Ala Ala Phe Val Pro Val Asp Pro Asp Tyr
 530 535 540

Pro Ala Asp Arg Val Ala Phe Met Leu Ala Asp Ser Ala Val Ala Met
 545 550 555 560

Val Val Cys Gln Glu Ala Thr Ser Gly Val Val Pro Pro Gly Tyr Gln
 565 570 575

Gln Leu Leu Val Asn Asp Ala Asp Asp Gly Glu Ala Ala Leu Val Pro
 580 585 590

Ile Gly Ala Asp Asp Leu Ala Tyr Val Met Tyr Thr Ser Gly Ser Thr
 595 600 605

Gly Thr Pro Lys Gly Val Ala Ile Pro His Gly Gly Val Ala Ala Leu
 610 615 620

Ala Gly Asp Pro Gly Trp Gly Val Gly Pro Gly Asp Ala Val Leu Met
 625 630 635 640

His Ala Pro His Thr Phe Asp Ala Ser Leu Tyr Asp Val Trp Val Pro
 645 650 655

Leu Val Ser Gly Ala Arg Val Met Ile Thr Glu Pro Gly Val Val Asp
 660 665 670

Ala Glu Arg Leu Ala Gly His Val Ala Asp Gly Leu Thr Ala Val Asn
 675 680 685

Phe Thr Ala Gly His Phe Arg Ala Leu Ala Gln Glu Ser Pro Glu Ser
 690 695 700

Phe Ser Gly Leu Arg Glu Val Ala Ala Gly Gly Asp Val Val Pro Leu
 705 710 715 720

Asp Val Val Glu Arg Val Arg Arg Ala Cys Pro Arg Leu Arg Val Trp
 725 730 735

His Thr Tyr Gly Pro Thr Glu Thr Thr Leu Cys Ala Thr Trp Lys Ala
 740 745 750

Ile Glu Pro Gly Asp Glu Val Gly Pro Val Leu Pro Ile Gly Arg Ala
 755 760 765

Leu Pro Gly Arg Arg Leu Tyr Val Leu Asp Ala Phe Leu Arg Pro Leu
 770 775 780

Pro Pro Gly Ile Ala Gly Asp Leu Tyr Leu Ala Gly Ala Gly Val Ala
 785 790 795 800

His Gly Tyr Leu Gly Arg Ala Ser Leu Thr Ala Glu Arg Phe Val Ala
 805 810 815

Asp Pro Phe Val Ala Gly Glu Arg Met Tyr Arg Thr Gly Asp Leu Ala
 820 825 830

Tyr Trp Thr Gly Glu Gly Glu Leu Val Phe Ala Gly Arg Asp Asp Asp
 835 840 845

Gln Val Lys Ile Arg Gly Tyr Arg Val Glu Pro Gly Glu Val Glu Ala
 850 855 860

Val Leu Ala Gly Gln Pro Gly Val Asp Gln Ala Val Val Val Ala Arg
 865 870 875 880

Glu Gly Arg Leu Leu Gly Tyr Val Val Ser Gly Gly Gly Val Asp Pro
 885 890 895

Val Arg Leu Arg Glu Gly Val Ala Arg Val Leu Pro Glu Tyr Met Val
 900 905 910

Pro Ala Ala Val Val Val Leu Gly Ala Val Pro Val Thr Ala Asn Gly
 915 920 925

Lys Val Asp Arg Glu Ala Leu Pro Asp Pro Gly Phe Gly Gly Arg Val
 930 935 940

Ser Gly Arg Glu Pro Arg Thr Glu Val Glu Arg Ala Leu Cys Gly Leu

945

950

955

960

Phe Ala Glu Val Leu Gly Leu Pro Gly Val Thr Ala Val Gly Pro Asp
 965 970 975

Asp Ser Phe Phe Glu Leu Gly Gly Asp Ser Ile His Ser Val Lys Leu
 980 985 990

Ala Ala Arg Ala Thr Arg Ala Gly Met Pro Phe Thr Val Val Glu Val
 995 1000 1005

Phe Glu His Lys Thr Pro Ala Gly Leu Ala Thr Ile Val Asp Val
 1010 1015 1020

Gly Gly Glu Pro Ala Ala Gly Pro Ala Asp Pro Pro Ser Asp Ser
 1025 1030 1035

Asp Leu Leu Gly Leu Ala Gln Asp Glu Ile Ala Glu Phe Glu Ala
 1040 1045 1050

Glu Phe Asp Asp Glu Arg His Ser Leu Arg
 1055 1060

<210> 28
 <211> 277
 <212> PRT
 <213> Nonomuria

<400> 28

Met Ile Ser Lys Ala Met His Gly Pro Ile Arg Pro Ala Arg Ala Asp
 1 5 10 15

Thr Leu Leu Ala Ser Val Gly Glu Arg Gly Ile Leu Cys Asp Phe Tyr
 20 25 30

Asp Glu Asn Ala Ser Glu Ile Phe Arg Asp Leu Glu Ala Asp Ala Gly
 35 40 45

Gly Thr Glu Glu Ala His Gly Phe Ala Ala Leu Val Arg Pro Glu Ser
 50 55 60

Gly Ala Ile Leu Glu Leu Gly Ala Gly Thr Gly Arg Leu Thr Ile Pro
 65 70 75 80

Leu Leu Glu Leu Gly Trp Glu Val Thr Ala Leu Glu Leu Ser Thr Ala
 85 90 95

Met Leu Thr Thr Leu Arg Thr Arg Leu Ala Asp Ala Pro Ala Asp Leu

100

105

110

Arg Asp Arg Cys Thr Leu Val His Ala Asp Met Thr Ala Phe Lys Leu
 115 120 125

Gly Glu Arg Phe Gly Thr Ala Ile Leu Ser Pro Ser Thr Ile Asp Leu
 130 135 140

Leu Asp Asp Ala Asp Arg Pro Gly Leu Tyr Ser Ser Val Arg Glu His
 145 150 155 160

Leu Arg Pro Gly Gly Arg Phe Leu Leu Gly Met Ala Asn Pro Asp Ala
 165 170 175

Ser Gly Arg Gln Glu Pro Leu Glu Arg Thr Gln Glu Phe Thr Gly Arg
 180 185 190

Ser Gly Arg Arg Tyr Val Leu His Ala Lys Val Tyr Pro Ser Glu Glu
 195 200 205

Ile Arg Asp Val Thr Ile His Pro Ala Asp Glu Ser Ala Asp Pro Phe
 210 215 220

Val Ile Cys Val Asn Arg Phe Arg Val Ile Thr Pro Asp Gln Ile Ala
 225 230 235 240

Arg Glu Leu Glu Gln Ala Gly Phe Asp Val Val Ala Arg Thr Pro Leu
 245 250 255

Pro Gly Val Arg Asn His Glu Leu Val Leu Glu Ala Gln Trp Gly Ser
 260 265 270

Val Glu Asp Ala His
 275

<210> 29
 <211> 531
 <212> PRT
 <213> Nonomuria

<400> 29

Met Ser Glu Glu Leu Leu Phe Leu Arg Pro Asp Thr Ile Ile Glu Pro
 1 5 10 15

Leu Ala Asn Arg Phe Tyr Ala Ser Met Tyr Ala Thr Ala Pro Val Thr
 20 25 30

Ala Ala Met Asn Leu Ala Phe Arg Asn Leu Pro Met Leu Glu Ser Tyr

35

40

45

Leu Ala Ser Pro Glu Trp His Phe Ala Ala Ala Arg Asp Pro Lys Phe
 50 55 60

Arg Gly Gly Phe Phe Val Asn Ile Glu Glu Gln Arg Lys Asn Glu Val
 65 70 75 80

Glu Ala Leu Leu Ala Ala Ile Arg Arg Asp Ser Ala Asp Val Leu Arg
 85 90 95

Phe Ala Glu Ala Ile Ala Glu Ala Glu Lys Ile Ile Arg Glu Glu Ala
 100 105 110

Thr Gly Tyr Asp Leu Arg Pro Leu Tyr Pro Lys Leu Pro Pro Glu Leu
 115 120 125

Ser Gly Leu Val Glu Ile Ala Tyr Asp Thr Gly Asn Ala Ala Ser Leu
 130 135 140

His Phe Leu Glu Pro Leu Ile Tyr Lys Ser Lys Ala Tyr Ala Glu Asp
 145 150 155 160

Cys Gln Ser Val Gln Leu Ser Val Glu Thr Gly Ile Glu Arg Pro Phe
 165 170 175

Val Met Ser Thr Pro Arg Leu Pro Ser Pro Asp Val Leu Glu Leu Asn
 180 185 190

Ile Pro Phe Arg His Pro Gly Leu Glu Glu Leu Phe Leu Ser Arg Ile
 195 200 205

Arg Pro Thr Thr Leu Ala Ala Leu Arg Glu Ala Leu Glu Leu Gly Asp
 210 215 220

Ala Glu Ala Ala Arg Leu Ala Asp Leu Leu Val Pro Glu Pro Ser Leu
 225 230 235 240

Ala Ser Asp Arg His Val Ala Ala Gly Ala Arg Ile Arg Tyr Trp Gly
 245 250 255

His Ala Cys Leu Leu Met Gln Thr Pro Asp Val Ala Ile Met Thr Asp
 260 265 270

Pro Phe Ile Ser Ala Asp Thr Asp Ala Thr Gly Arg Tyr Thr Tyr Asn
 275 280 285

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Asp Leu Pro Asp Arg Leu Asp Tyr Val Leu Ile Thr His Gly His Ser
 290 295 300

Asp His Leu Val Pro Glu Thr Leu Leu Gln Leu Arg Gly Arg Val Gly
 305 310 315 320

Thr Phe Val Val Pro Arg Thr Ser Arg Gly Asn Leu Cys Asp Pro Ser
 325 330 335

Leu Ala Leu Tyr Leu Arg Ser Phe Gly Leu Pro Ala Ile Glu Val Asp
 340 345 350

Asp Phe Asp Glu Ile Glu Phe Pro Gly Gly Lys Ile Val Ser Thr Pro
 355 360 365

Phe Phe Gly Glu His Ala Asp Leu Asp Ile Arg Ala Lys Ser Thr Tyr
 370 375 380

Trp Ile Asn Leu Gly Gly Lys Ser Ile Trp Val Gly Ala Asp Ser Ser
 385 390 395 400

Gly Leu Asp Pro Val Leu Tyr Arg His Ile Arg Arg His Leu Gly Ala
 405 410 415

Val Asn Ile Ala Phe Leu Gly Met Glu Cys Asp Gly Ala Pro Leu Asn
 420 425 430

Trp Gln Tyr Gln Pro Phe Ile Thr Lys Ala Leu Pro Lys Lys Met Ser
 435 440 445

Asp Ser Arg Lys Met Ser Gly Ser Asn Ala Glu Gln Ala Gly Ala Ile
 450 455 460

Val Thr Glu Leu Gly Ala Glu Glu Ala Tyr Ile Tyr Ala Met Gly Glu
 465 470 475 480

Glu Ser Trp Leu Gly His Val Met Ala Thr Ser Tyr Asn Glu Asp Ser
 485 490 495

Tyr Gln Leu Gln Gln Ile Ala Glu Phe Glu Ala Trp Cys Ser Arg Lys
 500 505 510

Gly Val Lys Ala Ala His Leu Leu Asp Gln His Glu Trp His Trp Ser
 515 520 525

Ser Ser Arg
 530

<210> 30
 <211> 523
 <212> PRT
 <213> Nonomuria

<400> 30

Met Thr Gly Gly Thr Gly Ala Asp Ala Ala Ser Ala Gly Ala Ser Ser
 1 5 10 15

Thr Arg Pro Glu Leu Arg Gly Glu Arg Cys Leu Pro Pro Ala Gly Pro
 20 25 30

Val Lys Val Thr Pro Asp Asp Pro Arg Tyr Leu Asn Leu Lys Leu Arg
 35 40 45

Gly Ala Asn Ser Arg Phe Asn Gly Glu Pro Asp Tyr Ile His Leu Val
 50 55 60

Gly Ser Thr Gln Gln Val Ala Asp Ala Val Glu Glu Thr Val Arg Thr
 65 70 75 80

Gly Lys Arg Val Ala Val Arg Ser Gly Gly His Cys Phe Glu Asp Phe
 85 90 95

Val Asp Asn Pro Asp Val Lys Val Ile Ile Asp Met Ser Leu Leu Thr
 100 105 110

Glu Ile Ala Tyr Asp Pro Ser Met Asn Ala Phe Leu Ile Glu Pro Gly
 115 120 125

Asn Thr Leu Ser Glu Val Tyr Glu Lys Leu Tyr Leu Gly Trp Asn Val
 130 135 140

Thr Ile Pro Gly Gly Val Cys Gly Gly Val Gly Val Gly Gly His Ile
 145 150 155 160

Cys Gly Gly Gly Tyr Gly Pro Leu Ser Arg Gln Phe Gly Ser Val Val
 165 170 175

Asp Tyr Leu Tyr Ala Val Glu Val Val Val Val Asn Lys Gln Gly Lys
 180 185 190

Ala Arg Val Ile Val Ala Thr Arg Glu Arg Asp Asp Pro His His Asp
 195 200 205

Leu Trp Trp Ala His Thr Gly Gly Gly Gly Gly Asn Phe Gly Val Val
 210 215 220

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Thr Lys Tyr Trp Met Arg Val Pro Glu Asp Val Gly Arg Asn Pro Glu
 225 230 235 240

Arg Leu Leu Pro Lys Pro Pro Ala Thr Leu Leu Thr Ser Thr Val Thr
 245 250 255

Phe Asp Trp Ala Gly Met Thr Glu Ala Ala Phe Ser Arg Leu Leu Arg
 260 265 270

Asn His Gly Glu Trp Tyr Glu Arg Asn Ser Gly Pro Asp Ser Pro Tyr
 275 280 285

Thr Gly Leu Trp Ser Gln Leu Met Ile Gly Asn Glu Val Pro Gly Met
 290 295 300

Gly Glu Ser Gly Phe Met Met Pro Ile Gln Val Asp Ala Thr Arg Pro
 305 310 315 320

Asp Ala Arg Arg Leu Leu Asp Ala His Ile Glu Ala Val Ile Asp Gly
 325 330 335

Val Pro Pro Ala Glu Val Pro Glu Pro Ile Glu Gln Arg Trp Leu Ala
 340 345 350

Ser Thr Pro Gly Arg Gly Gly Arg Gly Pro Ala Ser Lys Thr Lys Ala
 355 360 365

Gly Tyr Leu Arg Lys Arg Leu Thr Asp Arg Gln Ile Gln Ala Val Tyr
 370 375 380

Glu Asn Met Thr His Met Asp Gly Ile Asp Tyr Gly Ala Val Trp Leu
 385 390 395 400

Ile Gly Tyr Gly Gly Lys Val Asn Thr Val Asp Pro Ala Ala Thr Ala
 405 410 415

Leu Pro Gln Arg Asp Ala Ile Leu Lys Val Asn Tyr Ile Thr Gly Trp
 420 425 430

Ala Asn Pro Gly Asn Glu Ala Lys His Leu Thr Trp Val Arg Lys Leu
 435 440 445

Tyr Ala Asp Val Tyr Ala Glu Thr Gly Gly Val Pro Val Pro Asn Asp
 450 455 460

Val Ser Asp Gly Ala Tyr Ile Asn Tyr Pro Asp Ser Asp Leu Ala Asp
 465 470 475 480

Pro Gly Leu Asn Thr Ser Gly Val Pro Trp His Asp Leu Tyr Tyr Lys
 485 490 495

Gly Asn His Pro Arg Leu Arg Lys Val Lys Ala Ala Tyr Asp Pro Arg
 500 505 510

Asn His Phe His His Ala Leu Ser Ile Arg Pro
 515 520

<210> 31
 <211> 141
 <212> PRT
 <213> Nonomuria

<400> 31

Met Thr Ser Thr Ser Gly Arg His Leu Tyr His Arg Gln Val Arg Phe
 1 5 10 15

Ser Asp Ile Asp Ala His Gly His Val Asn Asn Val Arg Phe Leu Glu
 20 25 30

Tyr Leu Glu Asp Ala Trp Ile Ala Leu Tyr Leu Asp Asn Ala Gly Pro
 35 40 45

Pro Gln Glu Asp Arg Asp Gly Leu Pro Ala Val Gly Phe Ala Val Val
 50 55 60

Arg His Glu Ile Phe Tyr Arg Arg Pro Leu Arg Phe Arg His Gly Ser
 65 70 75 80

Val Arg Val Glu Ser Trp Val Thr Lys Val Asn Arg Val Thr Cys Glu
 85 90 95

Met Ala Ala Gln Ile Cys Ser Asp Gly Glu Val Phe Val Glu Ala Arg
 100 105 110

Ser Met Ile Met Gly Phe Asp Thr His Thr Ala Lys Pro Arg Arg Leu
 115 120 125

Thr Leu His Glu Arg Thr Phe Leu Lys Arg Tyr Leu Arg
 130 135 140

<210> 32
 <211> 372
 <212> PRT
 <213> Nonomuria

<400> 32

Met Gly Val Asp Val Ser Met Thr Thr Ser Ile Ala Ser Ala Glu Asp

1	5	10	15
Leu Ser Val	Leu Thr Gly	Leu Ser Glu Ile Thr Thr	Phe Ala Gly Val
	20	25	30
Gly Thr Ala Val	Ser Ala Thr	Ser Tyr Ser Gln Ala	Glu Leu Leu Glu
	35	40	45
Ile Leu Asp Ile Arg Asp	Pro Arg Ile Arg Ser	Leu Phe Leu Asn Ser	
	50	55	60
Ala Ile Glu Arg Arg Phe	Leu Ala Leu Pro Pro	Gln Gly Arg Asp Gly	
65	70	75	80
Glu Arg Val Ala	Glu Pro Gln Gly Asp	Leu Leu Asp Lys His	Lys Lys
	85	90	95
Leu Ala Val Asp Met Gly	Cys Arg Ala Leu Glu Ser	Cys Leu Lys Ser	
	100	105	110
Ala Gly Ala Thr Leu Ser	Asp Val Arg His Leu Cys	Cys Val Thr Ser	
	115	120	125
Thr Gly Phe Leu Thr Pro	Gly Leu Ser Ala Leu Ile	Ile Arg Glu Leu	
	130	135	140
Gly Leu Asp Pro His Cys	Ser Arg Ala Asp Ile Val	Gly Met Gly Cys	
145	150	155	160
Asn Ala Gly Leu Asn Ala	Leu Asn Leu Val Ala Gly	Trp Ser Ala Ala	
	165	170	175
His Pro Gly Glu Leu Ala	Val Val Leu Cys Ser Glu	Ala Cys Ser Ala	
	180	185	190
Ala Tyr Ala Leu Asp Gly	Thr Met Arg Thr Ala Val	Val Asn Ser Leu	
	195	200	205
Phe Gly Asp Gly Ser Ala	Ala Leu Ala Val Val Ser	Gly Asp Gly Arg	
	210	215	220
Ala Ala Gly Pro Arg Val	Leu Lys Phe Ala Ser Tyr	Val Ile Thr Asp	
225	230	235	240
Ala Ile Glu Ala Met Arg	Tyr Asp Trp Asp Arg Asp	Gln Asp Arg Phe	
	245	250	255

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Ser Phe Phe Leu Asp Pro Gln Ile Pro Tyr Val Val Gly Ala His Ala
 260 265 270

Glu Ile Val Val Asp Lys Leu Leu Ser Gly Thr Gly Leu Arg Arg Ser
 275 280 285

Asp Ile Gly His Trp Leu Val His Ser Gly Gly Lys Lys Val Ile Asp
 290 295 300

Ala Ile Val Val Asn Leu Gly Leu Ser Arg His Asp Val Arg His Thr
 305 310 315 320

Thr Ala Val Leu Arg Asp Tyr Gly Asn Leu Ser Ser Gly Ser Phe Leu
 325 330 335

Phe Ser Tyr Glu Arg Leu Ala Gly Glu Gly Val Thr Arg Pro Gly Asp
 340 345 350

Tyr Gly Val Leu Met Thr Met Gly Pro Gly Ser Thr Ile Glu Thr Ala
 355 360 365

Leu Ile Gln Trp
 370

<210> 33
 <211> 213
 <212> PRT
 <213> Nonomuria

<400> 33

Met Asn Gly Glu Leu Glu Leu Ser Leu Asp Gly Thr Gln Ala Leu Thr
 1 5 10 15

Ala Ser Val Glu Glu Leu Asn Gly Leu Cys Asp Arg Ala Glu Asp His
 20 25 30

Arg Ala Pro Gly Pro Val Ile Val His Val Thr Gly Val Pro Arg Leu
 35 40 45

Gly Trp Ser Lys Gly Leu Thr Val Gly Leu Val Ser Lys Trp Glu Arg
 50 55 60

Val Val Arg Arg Phe Glu Arg Leu Gly Arg Leu Thr Val Ala Val Ala
 65 70 75 80

Ser Gly Asp Cys Ala Gly Pro Ser Leu Asp Leu Leu Leu Ala Ala Asp
 85 90 95

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Val Arg Ile Ala Ala Pro Ala Thr Arg Leu Leu Pro Ser Trp Ala Gly
 100 105 110

Gly Ala Ala Trp Pro Gly Met Ala Val Tyr Arg Leu Thr Gln Gln Ala
 115 120 125

Gly Thr Gly Gly Ile Arg Arg Ala Val Leu Leu Gly Ala Pro Ile Asp
 130 135 140

Ala Asp Arg Ala Leu Ala Leu Asn Leu Ile Asp Glu Val Ser Ala Asp
 145 150 155 160

Pro Ala Ala Ser Leu Ala Gly Leu Ala Gly Ala Gly Asp Gly Ala Glu
 165 170 175

Leu Ala Ile Arg Arg Gln Leu Met Phe Glu Ala Ser Ser Thr Thr Phe
 180 185 190

Glu Asp Ala Leu Gly Ala His Leu Ala Ala Val Asp Arg Ala Leu Arg
 195 200 205

Arg Glu Thr Leu Ser
 210

<210> 34
 <211> 434
 <212> PRT
 <213> Nonomuria

<400> 34

Met Thr Thr Asp Trp Pro Ala Leu Pro Pro Arg Ala Pro Leu Ala Leu
 1 5 10 15

Trp Thr Leu Thr Ala Glu Ala Gln Arg Val Asp Asp Leu Leu Ala Gly
 20 25 30

Leu Pro Glu Pro Pro Ala Arg Thr Ser Ala Gln Arg Asp Ala Ala Ala
 35 40 45

Ser Ala Leu Asp Lys Val Arg Arg Met Arg Ala Asp Tyr Met Glu Ala
 50 55 60

His Ala Glu Glu Ile Tyr Gly Glu Leu Thr Ser Gly Arg Thr Arg His
 65 70 75 80

Leu Arg Ile Asp Glu Leu Val Arg Ala Ala Ala Arg Ala Tyr Pro Gly
 85 90 95

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Leu Val Pro Thr Asp Glu Gln Met Ala Ala Glu Arg Ala Arg Pro Gln
 100 105 110

Ala Glu Lys Glu Gly Arg Glu Ile Asp Gln Gly Ile Phe Leu Arg Gly
 115 120 125

Val Leu Arg Ala Pro Lys Ala Gly Pro His Leu Leu Asp Ala Met Leu
 130 135 140

Arg Pro Thr Pro Arg Ala Leu Glu Leu Leu Pro Glu Phe Ile Glu Ser
 145 150 155 160

Gly Glu Val Arg Met Glu Ala Val Leu Leu Arg Arg Arg Asp Gly Val
 165 170 175

Ala Tyr Leu Thr Leu Cys Arg Asp Asp Cys Leu Asn Ala Glu Asp Ala
 180 185 190

Gln Gln Val Asp Asp Met Glu Thr Ala Val Asp Leu Ala Leu Leu Asp
 195 200 205

Pro Gln Val Arg Val Gly Leu Leu Arg Gly Gly Glu Met Ser His Pro
 210 215 220

Arg Tyr Arg Gly Arg Arg Val Phe Cys Ala Gly Val Asn Leu Lys Lys
 225 230 235 240

Leu Ser Ser Gly Asp Ile Ser Leu Val Asp Phe Leu Leu Arg Arg Glu
 245 250 255

Leu Gly Tyr Ile His Lys Ile Val Arg Gly Val Tyr Thr Asp Gly Ser
 260 265 270

Trp His Ser Lys Leu Thr Asp Lys Pro Trp Met Ala Val Val Asp Ser
 275 280 285

Phe Ala Ile Gly Gly Gly Ala Gln Leu Leu Leu Val Phe Asp Gln Val
 290 295 300

Leu Ala Ala Ser Asp Ser Tyr Ile Ser Leu Pro Ala Ala Thr Glu Gly
 305 310 315 320

Ile Ile Pro Gly Val Ala Asn Tyr Arg Leu Thr Arg Phe Thr Gly Pro
 325 330 335

Arg Ala Ala Arg Gln Met Ile Leu Gly Gly Arg Arg Ile Arg Ala Asp
 340 345 350

Glu Pro Asp Ala Arg Leu Met Ile Asp Glu Val Val Pro Pro Glu Glu
 355 360 365

Met Asp Ala Ala Ile Asp Arg Ala Leu Ala Arg Leu Asp Gly Asp Ala
 370 375 380

Val Pro Ala Asn Arg Arg Met Leu Asn Leu Ala Glu Glu Pro Pro Glu
 385 390 395 400

Ala Phe Gly Arg Tyr Leu Ala Glu Phe Ala Leu Gln Gln Ala Leu Arg
 405 410 415

Ile Tyr Gly Arg Asp Val Ile Gly Lys Val Gly Arg Phe Ala Ala Gly
 420 425 430

Ser Ala

<210> 35
 <211> 265
 <212> PRT
 <213> Nonomuria

<400> 35

Met Ser Glu Pro Arg Val Arg Tyr Glu Lys Lys Glu His Val Ala His
 1 5 10 15

Val Thr Met Asn Arg Pro His Val Leu Asn Ala Met Asp Arg Arg Met
 20 25 30

His Glu Glu Leu Ala Glu Ile Trp Asp Asp Val Glu Ala Asp Asp Asp
 35 40 45

Val Arg Thr Val Val Leu Thr Gly Ala Gly Thr Arg Ala Phe Ser Val
 50 55 60

Gly Gln Asp Leu Lys Glu Arg Ala Leu Leu Asp Glu Ala Gly Thr Gln
 65 70 75 80

Ala Ser Thr Phe Gly Ser Arg Gly Gln Ala Gly His Pro Arg Leu Thr
 85 90 95

Asp Arg Phe Thr Leu Ser Lys Pro Val Val Ala Arg Val His Gly Tyr
 100 105 110

Ala Leu Gly Gly Gly Phe Glu Leu Val Leu Ala Cys Asp Leu Val Ile
 115 120 125

Ala Ser Glu Glu Ala Val Phe Gly Leu Pro Glu Val Arg Leu Gly Leu
 130 135 140

Ile Pro Gly Ala Gly Gly Val Phe Arg Leu Pro Arg Gln Leu Pro Gln
 145 150 155 160

Lys Val Ala Met Gly His Leu Leu Thr Gly Arg Arg Met Asp Ala Ala
 165 170 175

Thr Ala Phe Arg Tyr Gly Leu Val Asn Glu Val Val Pro Leu Asp Glu
 180 185 190

Leu Asp Arg Cys Val Ala Gly Trp Thr Asp Asp Leu Val Arg Ala Ala
 195 200 205

Pro Leu Ser Val Arg Ala Ile Lys Glu Ala Ala Met Arg Ser Leu Asp
 210 215 220

Ile Pro Leu Glu Glu Ala Phe Thr Thr Ser Tyr Pro Trp Glu Glu Arg
 225 230 235 240

Arg Arg Arg Ser Gly Asp Ala Ile Glu Gly Val Arg Ala Phe Val Glu
 245 250 255

Lys Arg Asp Pro Val Trp Thr Ser Arg
 260 265

<210> 36
 <211> 428
 <212> PRT
 <213> Nonomuria

<400> 36

Met Ile Pro Pro His Thr Leu Leu Val Phe Phe Val Gln Ala Ala Ala
 1 5 10 15

Leu Leu Leu Leu Ala Leu Leu Leu Gly Arg Leu Ala Val Arg Leu Gly
 20 25 30

Leu Ala Ala Val Val Gly Glu Leu Cys Ala Gly Val Ile Leu Gly Pro
 35 40 45

Ser Val Leu Gly Gln Val Ala Pro Gly Ala Glu Gln Trp Leu Phe Pro
 50 55 60

Ser Pro Ser Ser His Met Leu Asp Ala Val Gly Gln Leu Gly Val Leu
 65 70 75 80

Leu Leu Ile Gly Leu Thr Gly Ala His Leu Asp Leu Arg Leu Ile Arg
85 90 95

Arg Gln Gly Ala Thr Ala Val Arg Val Ser Ala Phe Gly Leu Val Val
100 105 110

Pro Met Ala Leu Gly Ile Gly Ala Gly Leu Leu Leu Pro Ala Glu Phe
115 120 125

Arg Gly Thr Gly Gly Ser Ala Val Phe Ala Leu Phe Leu Gly Val Thr
130 135 140

Met Cys Val Ser Ser Ile Pro Val Ile Ala Lys Thr Leu Met Asp Met
145 150 155 160

Asn Leu Leu His Arg Asn Val Gly Gln Leu Thr Leu Thr Ala Gly Met
165 170 175

Ile Asp Asp Ala Phe Gly Trp Val Leu Leu Ser Val Val Thr Ala Met
180 185 190

Ala Thr Ala Gly Ala Gly Ala Gly Thr Val Val Leu Ser Ile Ala Ser
195 200 205

Leu Leu Gly Val Ile Val Phe Ser Val Val Ile Gly Arg Pro Ala Val
210 215 220

Arg Val Ala Leu Arg Thr Thr Glu Asp Gln Gly Val Ile Ala Gly Gln
225 230 235 240

Val Val Val Leu Val Leu Ala Ala Ala Ala Gly Thr His Ala Leu Gly
245 250 255

Leu Glu Pro Ile Phe Gly Ala Phe Val Ala Gly Leu Leu Val Ser Thr
260 265 270

Ala Met Pro Asn Pro Val Arg Leu Ala Pro Leu Arg Thr Val Thr Leu
275 280 285

Gly Val Leu Ala Pro Leu Tyr Phe Ala Thr Met Gly Leu Arg Val Asp
290 295 300

Leu Thr Ala Leu Ala Arg Pro Glu Val Leu Ala Val Gly Leu Leu Val
305 310 315 320

Leu Ala Leu Ala Ile Ile Gly Lys Phe Leu Gly Ala Phe Leu Gly Ala
325 330 335

Trp Thr Ser Arg Leu Ser Arg Trp Glu Ala Leu Ala Leu Gly Ala Gly
 340 345 350

Met Asn Ala Arg Gly Val Ile Gln Met Ile Val Ala Thr Val Gly Leu
 355 360 365

Arg Leu Gly Val Ile Thr Asp Glu Ile Phe Thr Ile Ile Ile Val Val
 370 375 380

Ala Val Ile Thr Ser Leu Leu Ala Pro Pro Leu Leu Arg Leu Ala Met
 385 390 395 400

Thr Arg Ile Glu Ala Thr Ala Glu Glu Glu Ala Arg Leu Leu Ala Tyr
 405 410 415

Gly Leu Arg Pro Gly Glu Ala Arg Glu Asp Val Arg
 420 425

<210> 37
 <211> 251
 <212> PRT
 <213> Nonomuria

<400> 37

Met Ser Thr Trp Phe Arg Cys Phe Asp Arg Arg Pro Leu Ala Thr Met
 1 5 10 15

Arg Leu Ile Cys Phe Pro His Ala Gly Gly Ser Ala Val Phe Tyr Arg
 20 25 30

Asn Trp His Arg Leu Ala Ala Pro Glu Ile Glu Val His Ala Val Gln
 35 40 45

Tyr Pro Gly Arg Ala Asp Arg Leu His Glu Pro Leu Val Gly Asp Ala
 50 55 60

His Arg Leu Ala Glu Ser Val Gly Arg Glu Leu Arg Pro Leu Leu Asp
 65 70 75 80

Arg Pro Val Ala Leu Phe Gly His Ser Met Gly Ser Leu Ile Ala Tyr
 85 90 95

Glu Thr Ala Arg Leu Leu Thr Gly Ser Gly Ile Pro Pro Ala His Leu
 100 105 110

Phe Val Ser Gly Gly Val Ala Ala His Asp Arg Gly Arg Leu Ala His
 115 120 125

Arg Val Ala Pro Ala Ser Glu Glu Ala Leu Ile Asp Arg Leu Arg Leu
 130 135 140

Leu Gly Gly Thr Asp Ala Glu Ala Leu Ala Ser Ala Glu Phe Arg Ala
 145 150 155 160

Phe Ala Leu Pro Tyr Val Arg Asn Asp Phe Gln Leu Val Gln Ser Tyr
 165 170 175

Arg His Thr Pro Gly Pro Pro Leu Thr Val Pro Ile Thr Ala Phe Thr
 180 185 190

Gly Ala Asp Asp Pro Val Val Arg Leu Asp Ala Val Ala Arg Trp Ala
 195 200 205

Glu Leu Thr Ala Arg Glu Phe Ser Cys His Val Leu Pro Gly Gly His
 210 215 220

Phe Phe Leu Gly His Glu Gln Ala Ala Leu Trp Ala His Leu His Ala
 225 230 235 240

Arg Leu Gly Ile Ala Thr Pro Ala His Cys Gly
 245 250

<210> 38
 <211> 428
 <212> PRT
 <213> Nonomuria

<400> 38

Met Asp Ser His Val Leu Ala His Gln Leu Ser Lys Glu Thr Leu His
 1 5 10 15

Gly Ser Leu Met Asp Pro Ala Ile Glu Ser Met Asn Leu Leu Asn Glu
 20 25 30

Ile Ala Gly Asn Tyr Pro Asp Ala Ile Ser Met Ala Ala Gly Arg Pro
 35 40 45

Tyr Glu Glu Phe Phe Asp Val Gly Leu Ile His Asp Tyr Leu Glu Ala
 50 55 60

Tyr Arg Asp His Leu Arg Asn Asp Arg Arg Met Asp Asp Ala Gly Ile
 65 70 75 80

Ser Arg Met Leu Phe Gln Tyr Gly Thr Thr Lys Gly Ile Ile Ser Asp
 85 90 95

Leu Val Ala Arg His Leu Ala Glu Asp Glu Asn Ile Glu Ala Asp Pro
 100 105 110

Ala Ser Val Val Ile Thr Val Gly Phe Gln Glu Ala Met Phe Leu Val
 115 120 125

Leu Arg Ala Leu Arg Ala Asn Glu Arg Asp Val Leu Leu Ala Pro Thr
 130 135 140

Pro Thr Tyr Val Gly Leu Thr Gly Ala Ala Leu Leu Thr Asp Thr Pro
 145 150 155 160

Val Trp Pro Val Gln Ser Thr Asp Asn Gly Ile Asp Leu Asp His Leu
 165 170 175

Glu His Gln Leu Lys Arg Ala Gln Asp Gln Gly Ala Arg Val Arg Ala
 180 185 190

Cys Tyr Val Thr Pro Asn Phe Ala Asn Pro Thr Gly Thr Ser Met Asp
 195 200 205

Leu Pro Ala Arg His Arg Leu Leu Glu Val Ala Ala Ala His Gly Ile
 210 215 220

Leu Ile Leu Glu Asp Asn Ala Tyr Gly Leu Leu Gly Gln Asp Arg Leu
 225 230 235 240

Pro Thr Leu Lys Ser Leu Asp His Ala Ala Thr Val Val Tyr Leu Gly
 245 250 255

Ser Phe Ala Lys Thr Gly Met Pro Gly Ala Arg Val Gly Tyr Val Val
 260 265 270

Ala Asp Gln His Val Ala Gly Gly Gly Ser Leu Ala Asp Glu Leu Ala
 275 280 285

Lys Leu Lys Gly Met Leu Thr Val Asn Thr Ser Pro Ile Ala Gln Ala
 290 295 300

Val Ile Ala Gly Lys Leu Leu Arg His Asp Phe Ser Leu Ala Arg Ala
 305 310 315 320

Asn Ala Arg Glu Thr Ala Ile Tyr Gln Arg Asn Leu His Leu Thr Leu
 325 330 335

Asp Glu Leu Thr Arg Arg Leu Gly Ala Val Pro Gly Val Thr Trp Asn

340	345	350
Ala Pro Thr Gly Gly Phe Phe Ile Thr Val Thr Val Pro Phe Val Val		
355	360	365
Asp Asp Glu Leu Leu Glu His Ala Ala Arg Asp His Gly Val Leu Phe		
370	375	380
Thr Pro Met His His Phe Tyr Gly Gly Lys Asp Gly Phe Asn Gln Leu		
385	390	395 400
Arg Leu Ser Ile Ser Leu Leu Asn Pro Gln Leu Ile Glu Glu Gly Val		
405	410	415
Ser Arg Leu Ala Gly Leu Val Thr Ala Cys Leu Pro		
420	425	

<210> 39
 <211> 18
 <212> DNA
 <213> synthetic

<400> 39
 atgcgcgtgt tgatctcg

18

<210> 40
 <211> 18
 <212> DNA
 <213> synthetic

<400> 40
 cggctgaccg cggcgaac

18

<210> 41
 <211> 20
 <212> DNA
 <213> synthetic

<400> 41
 cgtgggggtg gatgtatcga

20

<210> 42
 <211> 17
 <212> DNA
 <213> synthetic

<400> 42
 tcaccattgg atcagcg

17

<210> 43
 <211> 18
 <212> DNA

<400> 43

tcaggagacg aacccccgc

18

<210> 44
<211> 18
<212> DNA
<213> synthetic

<400> 44
gtgcacgaaa gtcccgtc

18

<210> 45
<211> 18
<212> DNA
<213> synthetic

<400> 45
atggactccc acgttctc

18

<210> 46
<211> 18
<212> DNA
<213> synthetic

<400> 46
tcaggggaga catgcggt

18

<210> 47
<211> 29
<212> DNA
<213> synthetic

<400> 47
ttttgaattc tcaggcgatc cgtccgtct

29

<210> 48
<211> 31
<212> DNA
<213> synthetic

<400> 48
tttttctaga gcccggacac ccgggggctg a

31

<210> 49
<211> 31
<212> DNA
<213> synthetic

<400> 49
tttttctaga agtcatggtg atgtgcgaca t

31

<210> 50
<211> 30
<212> DNA
<213> synthetic

<400> 50

ttttaagctt atgttgagg acgccgaccg